# Certificate of Test

February 2010

## Ablerex Electronics Co., Ltd.

| | |
|---|---|
| **Product Type** | **: 2.4GHz ISM RF Module** |
| **Model Number** | **: RFAN4** |
| **Brand Name** | **: Ablerex** |
| **Test Report Number** | **: 0910082R-01** |
| **Date of Test** | **: December 29, 2009 – January 05, 2010** |

**This Product was tested to the following standards at the laboratory of Global EMC Standard Tech. Corp., and found Compliance.**

**Standards:**
**FCC Part 15 Subpart C Paragraph 15.249**
**ANSI C63.4: 2003**

*http : //www.gestek.com.tw*

**Sharon Chang, President**

**Issue Date: February 12, 2010**


GESTEK EMC LAB
**N0. 3, Pau-Tou-Tsuo Valley, Chia-Pau Tsuen,**
**Lin Kou Hsiang, Taipei County, Taiwan, R.O.C.**
**TEL:886-2-2603-5321**
**FAX:886-2-2603-5325**


NEMKO NVLAP NVLAP LAB CODE 200085-0 VCCI BSMI

# Test Report Application for Certification
## On Behalf Of

# Ablerex Electronics Co., Ltd.

## EUT:
## 2.4GHz ISM RF Module

## Model Number: RFAN4

### FCC ID: X5PRFAN4

## Prepared for:
## Ablerex Electronics Co., Ltd.
## 1F, No. 3 Lane 7, Paokao Rd, Hsintien 23114 Taipei Hsien, Taiwan R.O.C.

**Report By :Global EMC Standard Tech. Corp.**
**No.3 Pau-Tou-Tsuo Valley, Chia-Pau**
**Tsuen, Lin Kou Hsiang, Taipei County,**
**Taiwan, R.O.C.**
**Tel : 886-2-2603-5321**
**Fax : 886-2-2603-5325**

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2.This report is the property of GesTek, and shall not be reproduced, other than in full, without the written consent of GesTek.
3.The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government.
4.All data in this report are traceable to national standard or international standard.

# TABLE OF CONTENTS

# 1. CERTIFICATION

**Applicant : Ablerex Electronics Co., Ltd.**

| | |
|---|---|
| EUT Description | : 2.4GHz ISM RF Module |
| Model Number | : RFAN4 |
| Serial Number | : N/A |
| Brand Name | : Ablerex |
| FCC ID | : X5PRFAN4 |
| Tested Power Supply | : DC 3.3V By Battery |
| Manufacturer | : Ablerex Electronics Co., Ltd. |
| Manufacturer Address | : 1F, No. 3 Lane 7, Paokao Rd, Hsintien 23114 Taipei Hsien, Taiwan R.O.C. |

**MEASUREMENT PROCEDURES USED:**

| | |
|---|---|
| ☑ **CFR 47, Part 15** | Radio Frequency Device Subpart C Intentional Radiators :2008 |
| ☑ **ANSI C63.4** | Methods of Measurements of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the range of 9kHz To 40GHz. 2003 |

THE MEASUREMENT SHOWN IN THE ATTACHMENT WAS MADE IN ACCORDANCE WITH THE PROCEDURES INDICATED, AND THE MAXIMUM ENERGY EMITTED BY THE EQUIPMENT WAS FOUND TO BE WITHIN THE ABOVE LIMITS APPLICABLE.

TAF Testing Laboratory 1082

NVLAP®

Sample Received Date: **October 27, 2009**
Date of Test : **December 29, 2009 – January 05, 2010**
Issue Date : **February 12, 2010**

**NVLAP LAB CODE 200085-0**

In order to ensure the quality and accuracy of this document, the contents have been thoroughly reviewed by the following qualified personnel from GesTek Lab.

**Documented By :**

Nico Hsu.

Nico Hsu / Adm. Dept. Technical Report Author

**Tested By :**

John Wu

John Wu / Eng. Dept. Engineer

**Approved By :**

Tony Tsai

Tony Tsai / Director

This test data shown below is traceable to National or international standard such as NIST/USA, etc. The laboratory's NVLAP accreditation in no way constitutes or implies product certification, approval, or endorsement by NVLAP or the United States government.

# 2. GENERAL INFORMATION

## 2.1 PRODUCTION DESCRIPTION

| | |
|---|---|
| **Product Name** | : 2.4GHz ISM RF Module |
| **Model Number** | : RFAN4 |
| **Serial Number** | : N/A |
| **Brand Name** | : Ablerex |
| **FCC ID** | : X5PRFAN4 |
| **Modulation Type** | : MSK |
| **Antenna Type** | : Dipole Ant, Chip Ant |
| **Frequencg Range** | : 2402MHz~2480MHz |
| **Channel Number** | : 79 Channel |
| **Working Voltage** | : DC 3.3V By Battery |

## Frequency of Each Channel:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|---|---|---|---|
| 00 | 2402 | 20 | 2422 | 40 | 2442 | 60 | 2462 |
| 01 | 2403 | 21 | 2423 | 41 | 2443 | 61 | 2463 |
| 02 | 2404 | 22 | 2424 | 42 | 2444 | 62 | 2464 |
| 03 | 2405 | 23 | 2425 | 43 | 2445 | 63 | 2465 |
| 04 | 2406 | 24 | 2426 | 44 | 2446 | 64 | 2466 |
| 05 | 2407 | 25 | 2427 | 45 | 2447 | 65 | 2467 |
| 06 | 2408 | 26 | 2428 | 46 | 2448 | 66 | 2468 |
| 07 | 2409 | 27 | 2429 | 47 | 2449 | 67 | 2469 |
| 08 | 2410 | 28 | 2430 | 48 | 2450 | 68 | 2470 |
| 09 | 2411 | 29 | 2431 | 49 | 2451 | 69 | 2471 |
| 10 | 2412 | 30 | 2432 | 50 | 2452 | 70 | 2472 |
| 11 | 2413 | 31 | 2433 | 51 | 2453 | 71 | 2473 |
| 12 | 2414 | 32 | 2434 | 52 | 2454 | 72 | 2474 |
| 13 | 2415 | 33 | 2435 | 53 | 2455 | 73 | 2475 |
| 14 | 2416 | 34 | 2436 | 54 | 2456 | 74 | 2476 |
| 15 | 2417 | 35 | 2437 | 55 | 2457 | 75 | 2477 |
| 16 | 2418 | 36 | 2438 | 56 | 2458 | 76 | 2478 |
| 17 | 2419 | 37 | 2439 | 57 | 2459 | 77 | 2479 |
| 18 | 2420 | 38 | 2440 | 58 | 2460 | 78 | 2480 |
| 19 | 2421 | 39 | 2441 | 59 | 2461 | | |

**Note:**

1. This device is transmitter of 2.4GHz ISM RF Module. The test report is for transmit function.
2. Test of channel was included the lowest、middle and highest frequency in highest data rate and to perform the test, then record on this report.
3. The antenna of EUT is printer on PCB and conform to FCC 15.203.
4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
5. The associate of receiver to accordance with Part 15 regulations and under Declaration of Conformity and record of measurment in test report that the report number is 0910082F-01.

## 2.2 OPERATIONAL DESCRIPTION

This device is transceiver of 2.4GHz ISM RF Module included transmit and receive function. The device can transmit signal to associate RF Module and revice signal form RF Module. The device have 79 channel and operated in 2.402 to 2.480GHz with MSK modulation. Another information please refer to users manual.

## 2.3 TEST MODES & EUT COMPONENTS DESCRIPTION

| EUT: 2.4GHz ISM RF Module, M/N: RFAN4 | | |
|---|---|---|
| **Test Mode** | **Mode 1-Dipole Ant** | **Mode 2-Chip Ant** |
| | Transmitter | |

## 2.4 SUMMARY OF TEST PROCEDURE AND TEST RESULTS

| Test Item | Applied Standard Section | Test Resut |
|---|---|---|
| Radistion Emission | 15.209, ANSI C63.4 Section 8 | Pass (refer to section 3.7) |
| Peak Power Output | 15.249(a), ANSI C63.4 Section 13 & Annex I | Pass (refer to section 3.7) |
| Band Edge | 15.249(d) , ANSI C63.4 Section 13 & Annex I | Pass (refer to section 4.6) |

## 2.5 CONFIGURATION OF THE TESTED SYSTEM

The FCC IDs/Types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

| Item | Device | No. | Configuration |
|---|---|---|---|
| 1 | **Battery** | **----** | Manufacturer : YUASA<br>Model Number : REW45-12 |

## 2.6 LAB AMBIENT

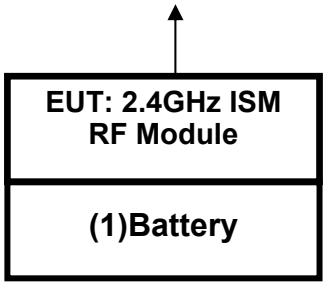
| Items | Range Requirement |
|---|---|
| Temperature (°C) | 10-40 |
| Humidity (%RH) | 10-90 |
| Barometric pressure (mbar) | 860-1060 |

## 2.7 TEST FACILITY ACCREDITATION

Global EMC Standard Tech. Corp. is accredited in respect of laboratory and the accreditation criteria is ISO/IEC 17025: 2005.

| ACCREDITATION | |
|---|---|
| **FCC SITE DESCRIPTION** | Aug. 10, 1995 /Aug. 25, 1998 File on<br>FCC Engineering Laboratory<br>Federal Communication Commission<br>7435 Oakland Mills Road<br>Columbia, MD 21046<br>Reference 31040/SIT1300F2 |
| **NVLAP LAB. CODE** | 200085-0<br>United Stated Department of commerce<br>National Institute of Standards and Technology<br>National Voluntary Laboratory Accreditation Program<br>Accreditation on NVLAP effective through Sep. 30, 2010<br>For CISPR 22, FCC Method and AS/NZS CISPR 22 Measurement. |
| **Taiwan Accreditation Foundation (TAF)** | Recognized by the Council of Taiwan Accreditation Foundation and confirmed to meet the requirements of ISO/IEC 17025.<br>Registration No.: 1082<br>Registration on TAF effective through Sep. 19, 2012 |

## 2.8 TEST SETUP




## 2.9 EUT OPERATING CONDITIONS

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

1. Setup the EUT and simulators as shown on 2.7.
2. Turn on the power of all equipments.
3. The transmitter will transmit the signal continue.
4. Confirm the receiver is reveive signal continue.
5. Repeat the above steps.

# 3. RADIATION EMISSION DATA

## 3.1 TEST EQUIPMENT

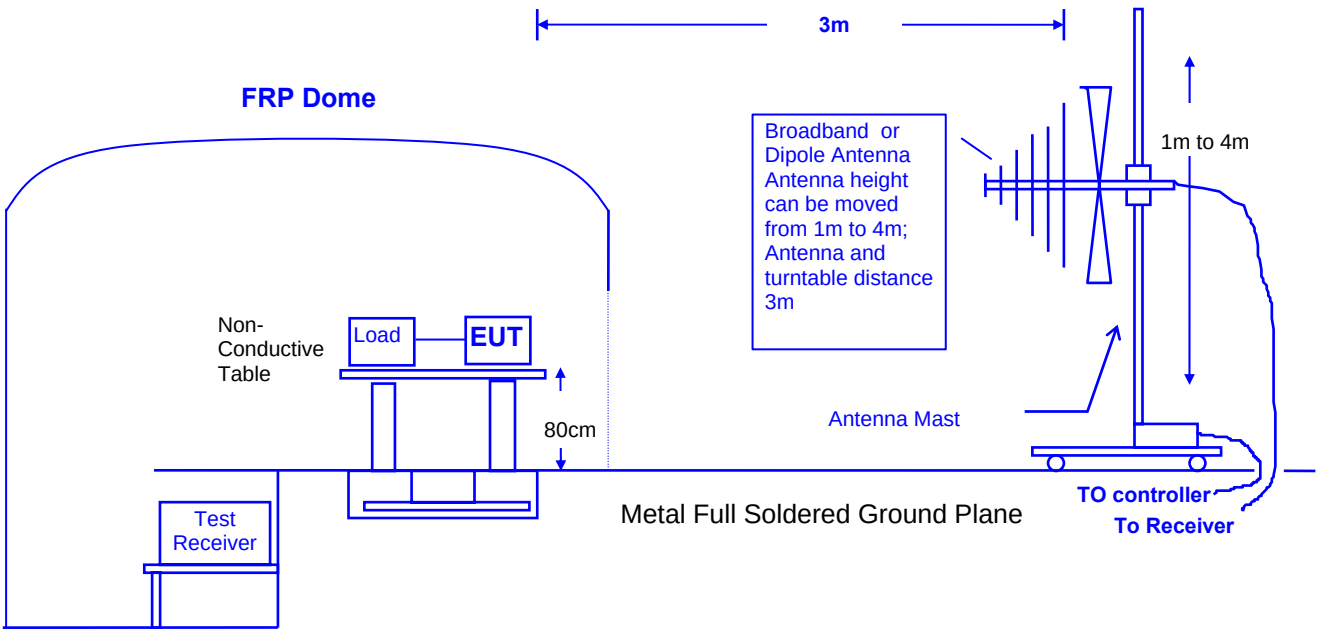
The following test equipments are used during the radiated emission tests:

| Item | Instrument | Manufacturer | Model | Serial No. | Next Cal. Date |
|---|---|---|---|---|---|
| 1 | RECEIVER | R & S | ESVS10 | 8421122/001 | 2010.03.25 |
| 2 | SPECTRUM | HP | E4407B | US39240339 | 2010.08.24 |
| 3 | PRE-AMPLIFIER | HP | 8449B | 3008A01263 | 2010.03.15 |
| 4 | BOARD-BAND ANTENNA | SCHWARZBECK | BBHA 9170 | BBHA9170164 | 2010.02.05 |
| 5 | PRE-AMPLIFIER | ADVANTEST | BB 525C | N/A | 2010.06.09 |
| 6 | BILOG ANTENNA | SCHAFFNER | CBL6112B | 2620 | 2010.11.21 |
| 7 | CABLE | GTK | N/A | GTK-E-A316-01 | 2010.11.04 |
| 8 | Test Program Software | GesTek | N/A | GTK-E-S001-01 | N/A |

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
2. The test was performed in GTK Open Site B1.

## 3.2 OPEN TEST SITE SETUP DIAGRAM

Note: This is a representative setup diagram for Table-top EUT.
For Floor-standing EUT, the table will be removed with all others setup condition remain the same.



## 3.3 RADIATED EMISSION LIMIT

☒ **General Radiated Emission Limits**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

| Frequency | Distance | Field Strength | |
|---|---|---|---|
| MHz | Meter | μV/M | dBμV/M |
| 30 to 88 | 3 | 100 | 40.0 |
| 88 to 216 | 3 | 150 | 43.5 |
| 216 to 960 | 3 | 200 | 46.0 |
| Above 960 | 3 | 500 | 54.0 |

**Remarks :**

1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

☒ **Fundamental and Harmonics Emission Limits**

| Frequency | Distance | Field Strength of Fundamental | | Field Strength of Harmonics | |
|---|---|---|---|---|---|
| MHz | Meter | mV/M | dBμV/M | μV/M | dBμV/M |
| 902-928 | 3 | 50 | 94 | 500 | 54 |
| 2400-2483.5 | 3 | 50 | 94 | 500 | 54 |
| 5725-5875 | 3 | 50 | 94 | 500 | 54 |

**Remarks :**

1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

## 3.4 EUT CONFIGURATION

The equipment which is listed 2.6 are installed on Radiated Emission Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

The device under test, installed in a representative system as described in section 3.2, was placed on a non-conductive table whose total height equaled 80 cm. This table can be rotated 360 degree. The measurement antenna was mounted to a non-conductive mast capable of moving the antenna vertically. Antenna height was varied from 1 meter to 4 meters and the system under test was rotated from 0 degree through 360 degrees relative to the antenna position and polarization (Horizontal and Vertical). Also the I/O cable position was investigated to find the maximum emission condition.

Based on ANSI C63.4 Section 13.1.4.1, this EUT is power by battery (DC Power) and through rotation of the EUT, all the three orthogonal positions ( X, Y & Z axes) are been determined with modulation, without modulation and with body-worn devices. The combination of the worst emission are then used in Final test measurement, please refer to section 3.7 of the test report for the final test results.

## 3.5 OPERATING CONDITION OF EUT

Same as section 2.7.

## 3.6 RADIATED EMISSION DATA

The measurement range of radiated emission, which is from **30 MHz to 10th harminic of fundamental,** was investigated. All readings below 1GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Above 1GHz are peak and avg. values with a resolution bandwidth of 1MHz. The initial step in collecting radiated emission data is a spectrum analyzer peak scans of the measurement range for all the test modes and then use test receiver for final measurement. Then the worst modes were reported the following data pages.

## 3.7 RADIATED EMISSIONS MEASUREMENT RESULTS

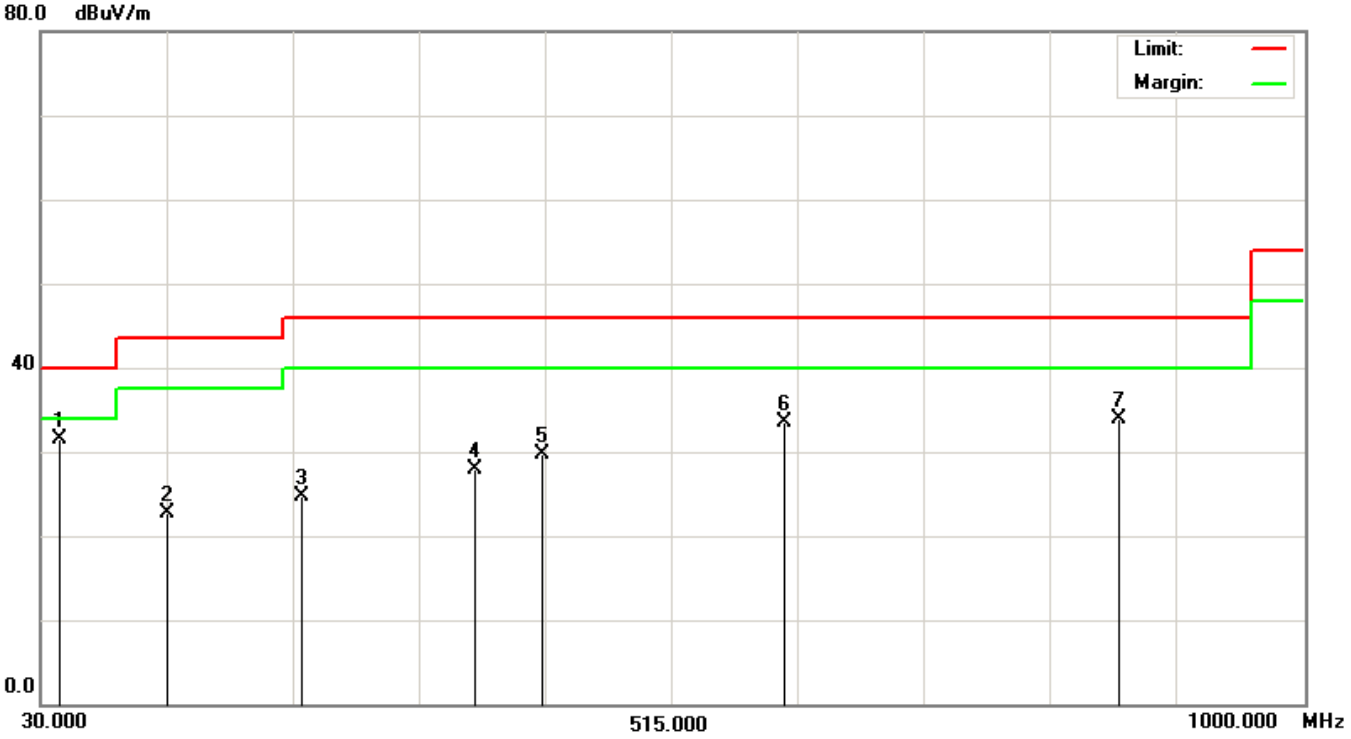
### 3.7.1 HARMONIC RADIATED EMISSIONS

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | ★44.5500 | 36.19 | -4.78 | 31.41 | 40.00 | -8.59 | QP |
| 2 | 127.0000 | 37.19 | -14.48 | 22.71 | 43.50 | -20.79 | QP |
| 3 | 231.2750 | 32.51 | -7.77 | 24.74 | 46.00 | -21.26 | QP |
| 4 | 364.6500 | 35.62 | -7.73 | 27.89 | 46.00 | -18.11 | QP |
| 5 | 415.5750 | 35.60 | -5.93 | 29.67 | 46.00 | -16.33 | QP |
| 6 | 602.3000 | 32.24 | 1.32 | 33.56 | 46.00 | -12.44 | QP |
| 7 | 859.3500 | 30.66 | 3.21 | 33.87 | 46.00 | -12.13 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



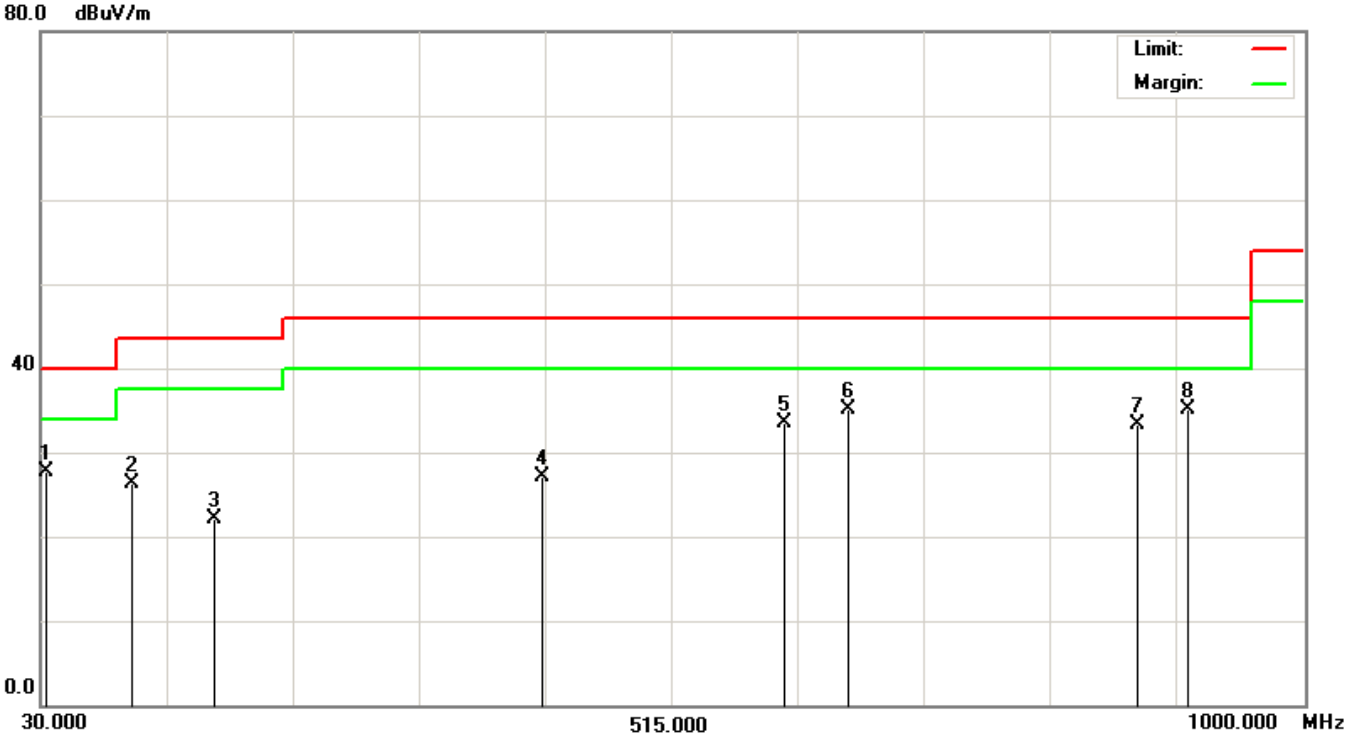

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBμV | Factor dB | Measurement dBμV/m | Limit dBμV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 34.8500 | 33.48 | -5.73 | 27.75 | 40.00 | -12.25 | QP |
| 2 | 100.3250 | 33.04 | -6.73 | 26.31 | 43.50 | -17.19 | QP |
| 3 | 163.3750 | 34.31 | -12.21 | 22.10 | 43.50 | -21.40 | QP |
| 4 | 415.5750 | 32.84 | -5.66 | 27.18 | 46.00 | -18.82 | QP |
| 5 | 602.3000 | 32.68 | 0.90 | 33.58 | 46.00 | -12.42 | QP |
| 6 | ★650.8000 | 33.10 | 2.01 | 35.11 | 46.00 | -10.89 | QP |
| 7 | 873.9000 | 31.89 | 1.43 | 33.32 | 46.00 | -12.68 | QP |
| 8 | 912.7000 | 34.69 | 0.36 | 35.05 | 46.00 | -10.95 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



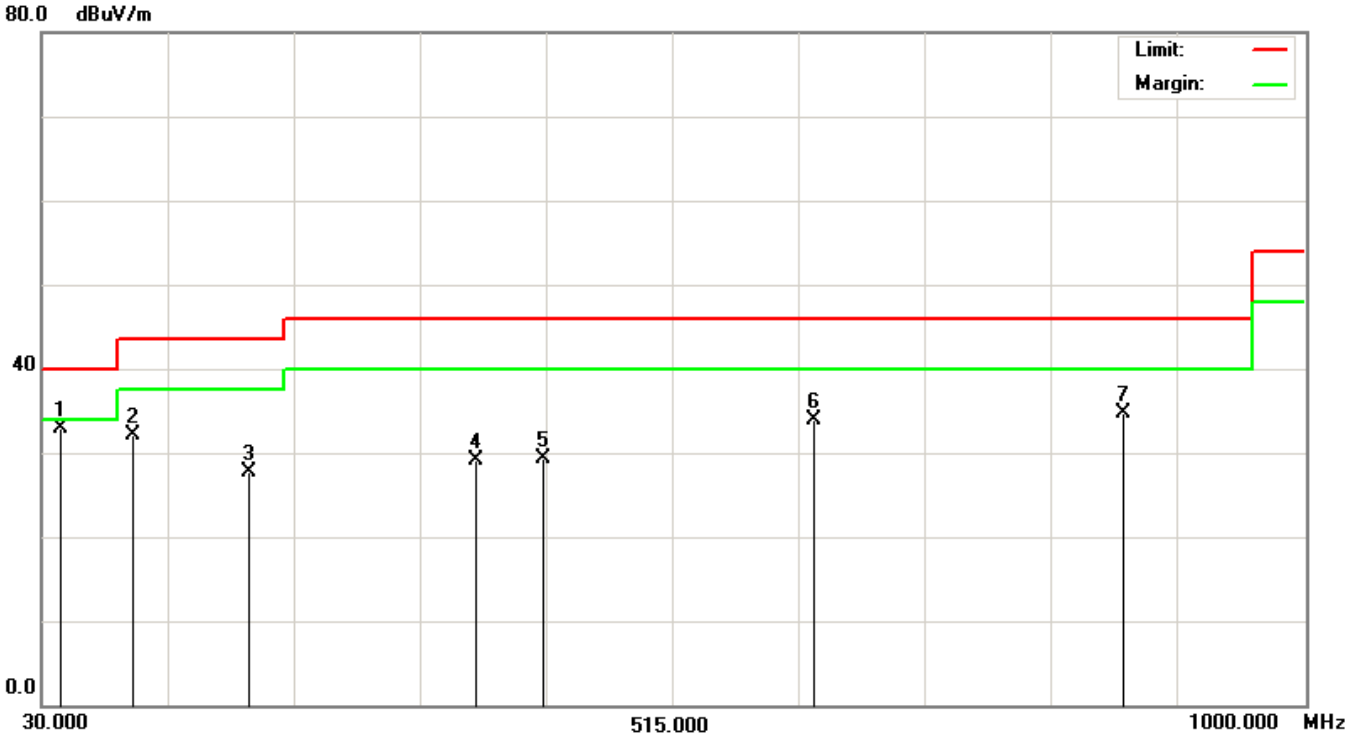

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | ★44.5500 | 37.64 | -4.78 | 32.86 | 40.00 | -7.14 | QP |
| 2 | 100.3250 | 43.07 | -10.88 | 32.19 | 43.50 | -11.31 | QP |
| 3 | 190.0500 | 39.03 | -11.40 | 27.63 | 43.50 | -15.87 | QP |
| 4 | 364.6500 | 36.76 | -7.73 | 29.03 | 46.00 | -16.97 | QP |
| 5 | 415.5750 | 35.15 | -5.93 | 29.22 | 46.00 | -16.78 | QP |
| 6 | 624.1250 | 32.30 | 1.69 | 33.99 | 46.00 | -12.01 | QP |
| 7 | 861.7750 | 31.59 | 3.02 | 34.61 | 46.00 | -11.39 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



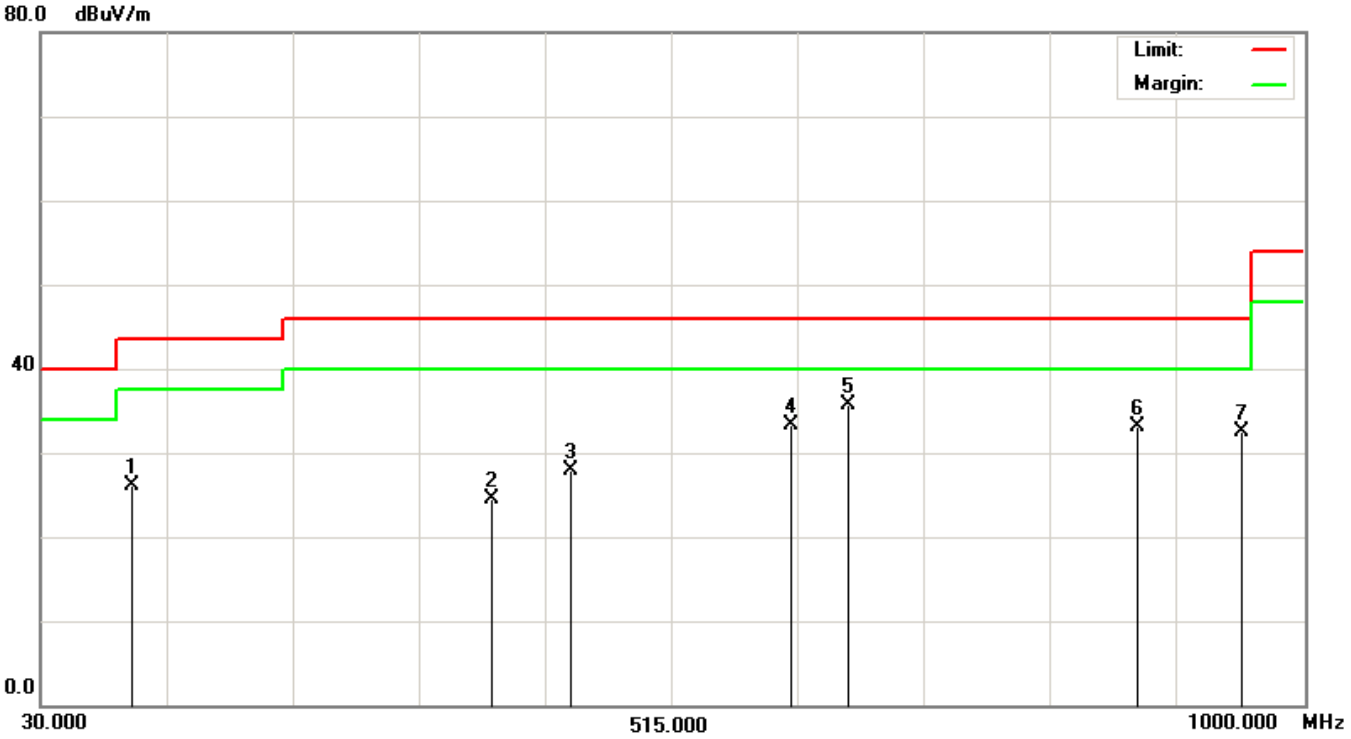

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 100.3250 | 32.83 | -6.73 | 26.10 | 43.50 | -17.40 | QP |
| 2 | 376.7750 | 33.99 | -9.43 | 24.56 | 46.00 | -21.44 | QP |
| 3 | 437.4000 | 32.93 | -5.00 | 27.93 | 46.00 | -18.07 | QP |
| 4 | 607.1500 | 32.22 | 1.07 | 33.29 | 46.00 | -12.71 | QP |
| 5 | ★650.8000 | 33.73 | 2.01 | 35.74 | 46.00 | -10.26 | QP |
| 6 | 873.9000 | 31.75 | 1.43 | 33.18 | 46.00 | -12.82 | QP |
| 7 | 953.9250 | 31.63 | 0.88 | 32.51 | 46.00 | -13.49 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.




Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | ★44.5500 | 36.96 | -4.78 | 32.18 | 40.00 | -7.82 | QP |
| 2 | 97.9000 | 35.90 | -12.00 | 23.90 | 43.50 | -19.60 | QP |
| 3 | 194.9000 | 37.41 | -11.51 | 25.90 | 43.50 | -17.60 | QP |
| 4 | 364.6500 | 36.66 | -7.73 | 28.93 | 46.00 | -17.07 | QP |
| 5 | 415.5750 | 34.94 | -5.93 | 29.01 | 46.00 | -16.99 | QP |
| 6 | 597.4500 | 32.70 | 1.14 | 33.84 | 46.00 | -12.16 | QP |
| 7 | 648.3750 | 32.47 | 1.09 | 33.56 | 46.00 | -12.44 | QP |
| 8 | 859.3500 | 30.96 | 3.21 | 34.17 | 46.00 | -11.83 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
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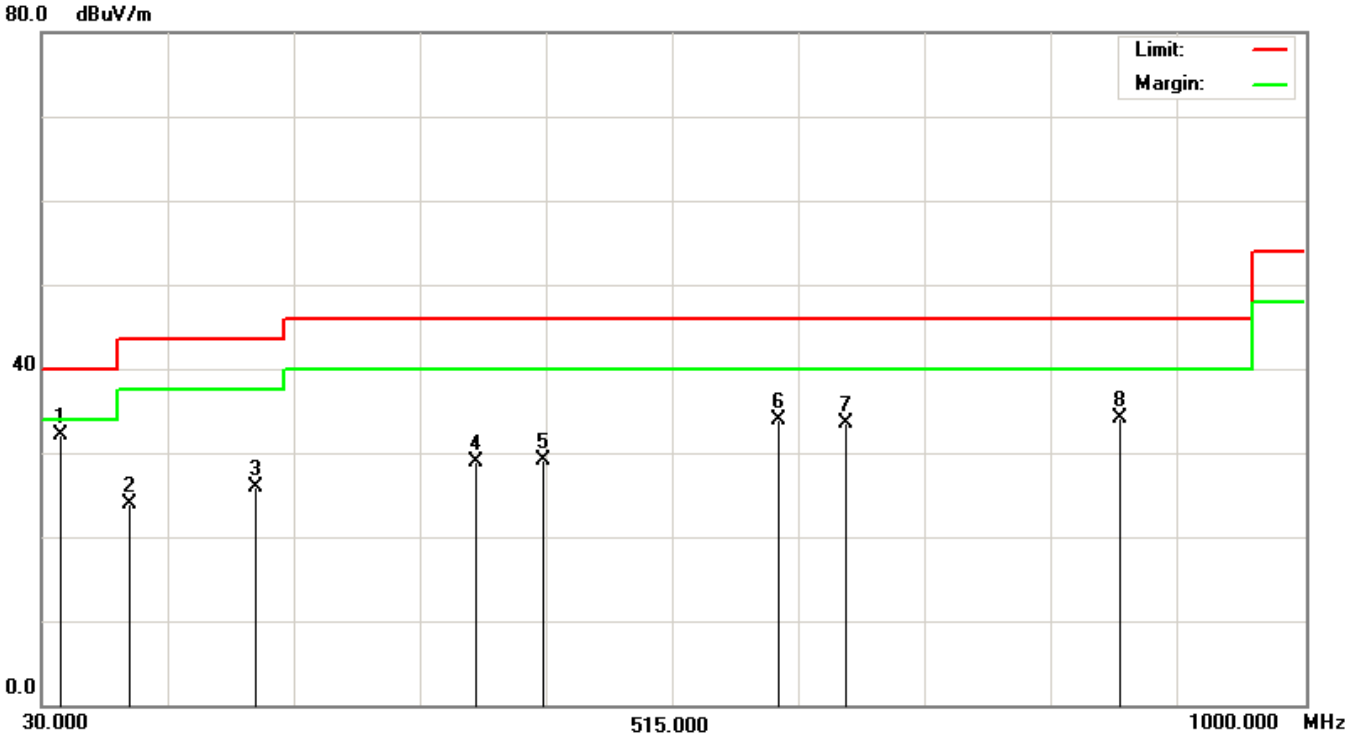


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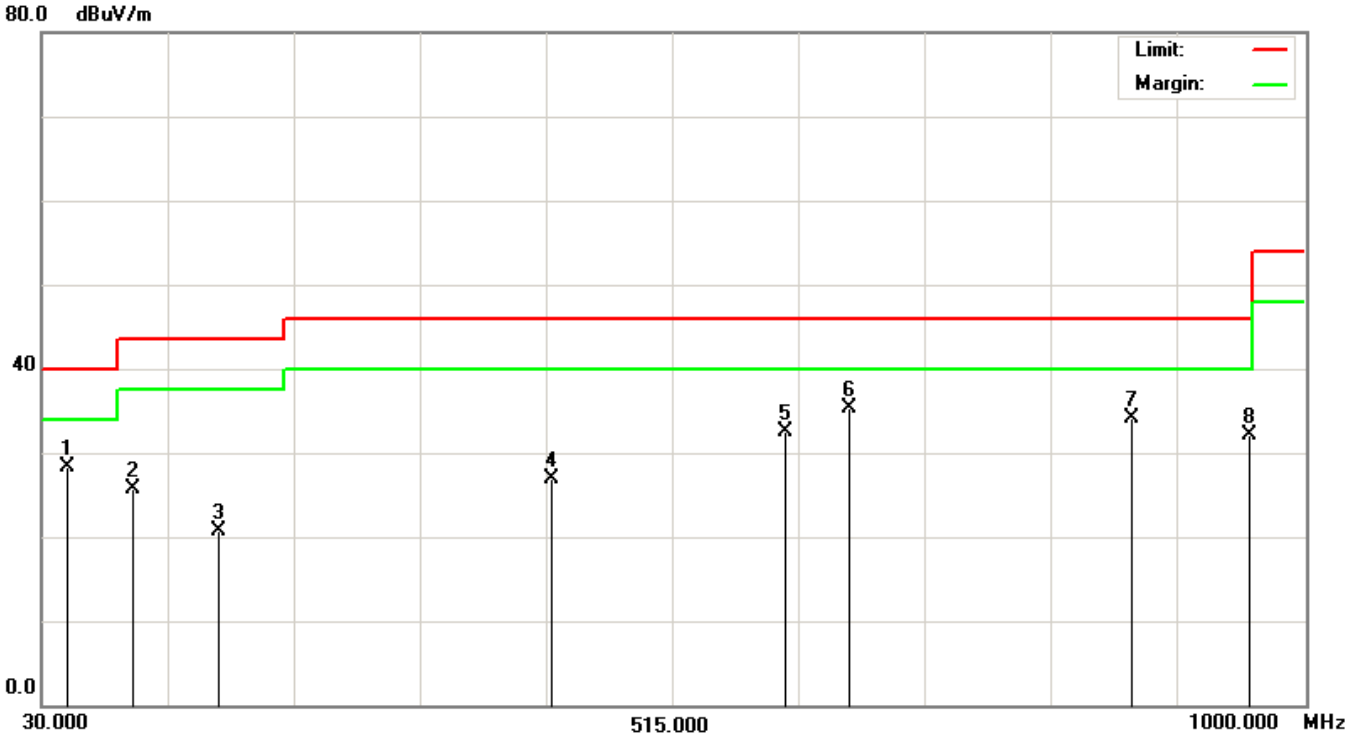
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 49.4000 | 42.20 | -13.80 | 28.40 | 40.00 | -11.60 | QP |
| 2 | 100.3250 | 32.51 | -6.73 | 25.78 | 43.50 | -17.72 | QP |
| 3 | 165.8000 | 32.48 | -11.76 | 20.72 | 43.50 | -22.78 | QP |
| 4 | 422.8500 | 32.20 | -5.30 | 26.90 | 46.00 | -19.10 | QP |
| 5 | 602.3000 | 31.68 | 0.90 | 32.58 | 46.00 | -13.42 | QP |
| 6 | ★650.8000 | 33.39 | 2.01 | 35.40 | 46.00 | -10.60 | QP |
| 7 | 869.0500 | 32.43 | 1.65 | 34.08 | 46.00 | -11.92 | QP |
| 8 | 958.7750 | 31.17 | 0.93 | 32.10 | 46.00 | -13.90 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



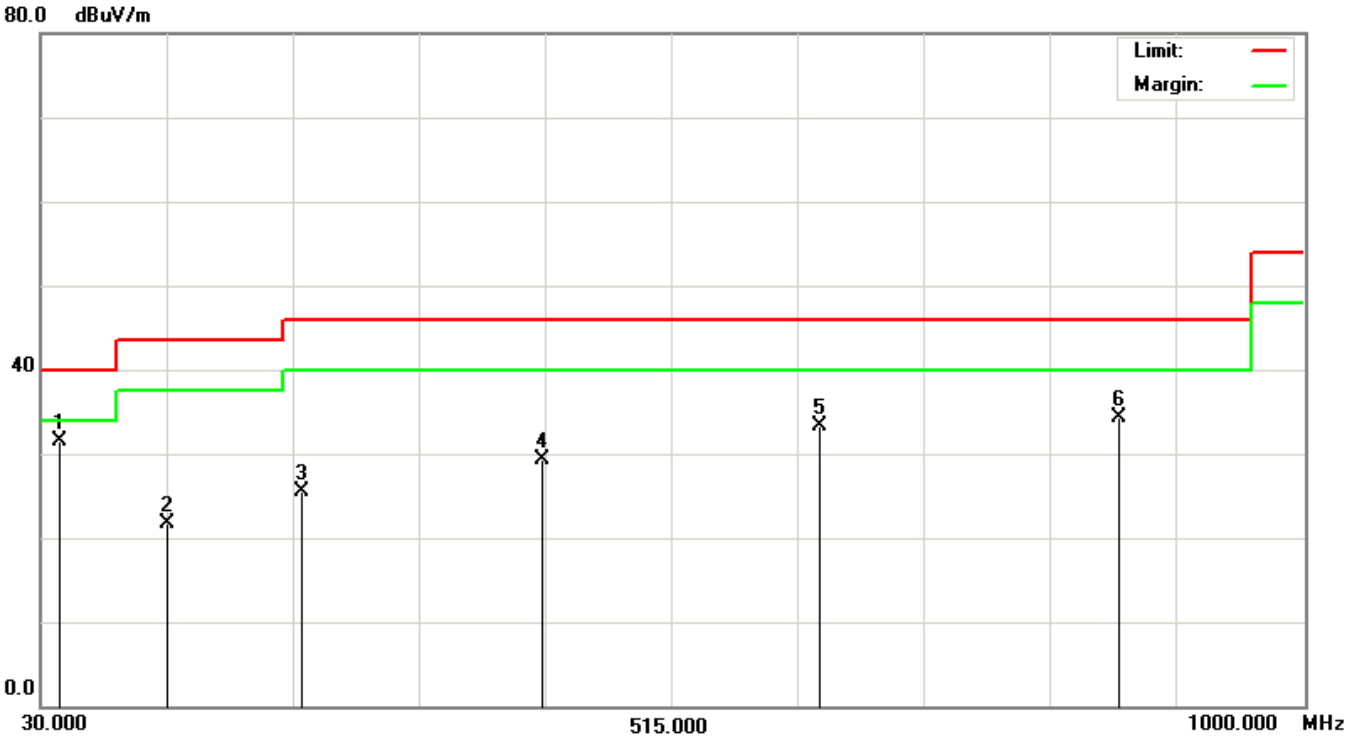

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBμV | Factor dB | Measurement dBμV/m | Limit dBμV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | ★44.5500 | 36.27 | -4.78 | 31.49 | 40.00 | -8.51 | QP |
| 2 | 127.0000 | 36.13 | -14.48 | 21.65 | 43.50 | -21.85 | QP |
| 3 | 231.2750 | 33.32 | -7.77 | 25.55 | 46.00 | -20.45 | QP |
| 4 | 415.5750 | 35.14 | -5.93 | 29.21 | 46.00 | -16.79 | QP |
| 5 | 628.9750 | 31.87 | 1.50 | 33.37 | 46.00 | -12.63 | QP |
| 6 | 859.3500 | 31.01 | 3.21 | 34.22 | 46.00 | -11.78 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



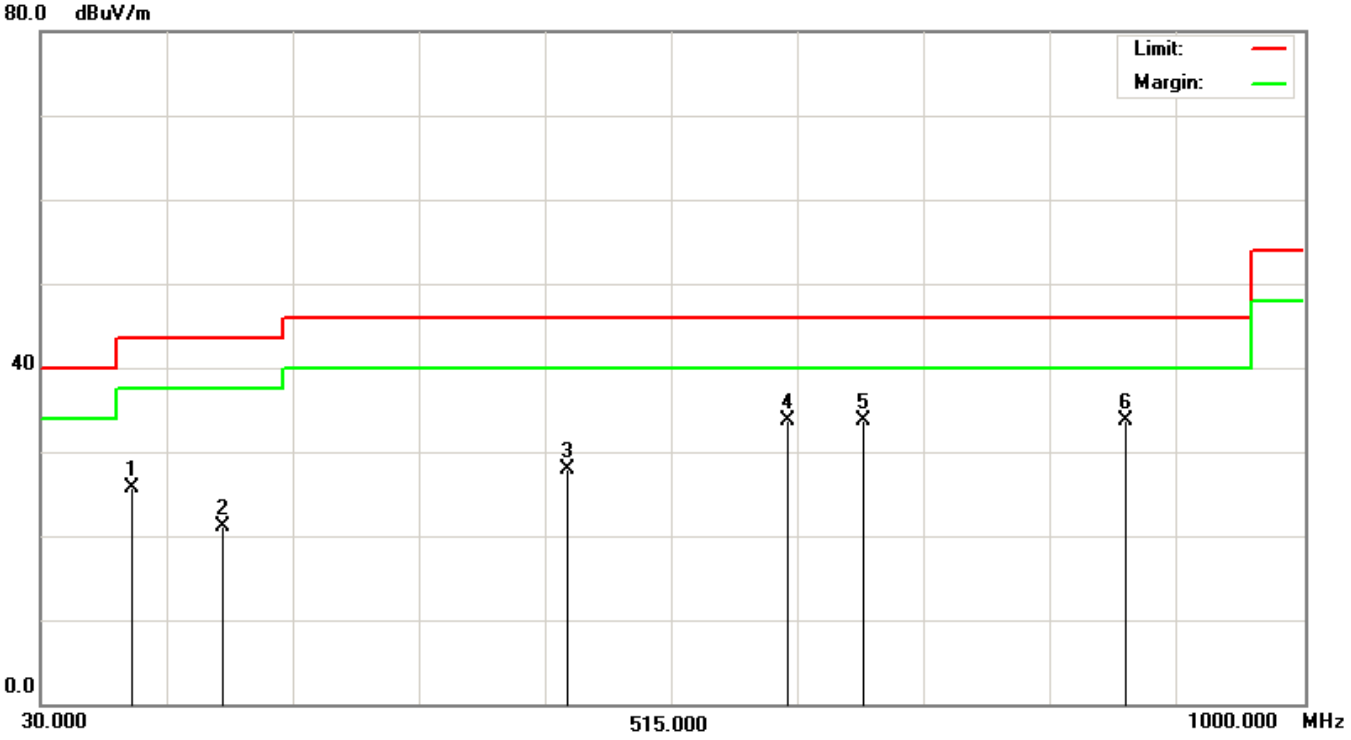

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBμV | Factor dB | Measurement dBμV/m | Limit dBμV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 100.3250 | 32.43 | -6.73 | 25.70 | 43.50 | -17.80 | QP |
| 2 | 170.6500 | 33.04 | -11.90 | 21.14 | 43.50 | -22.36 | QP |
| 3 | 434.9750 | 32.94 | -5.05 | 27.89 | 46.00 | -18.11 | QP |
| 4 | ★604.7250 | 32.75 | 0.98 | 33.73 | 46.00 | -12.27 | QP |
| 5 | 662.9250 | 31.02 | 2.69 | 33.71 | 46.00 | -12.29 | QP |
| 6 | 864.2000 | 31.75 | 1.86 | 33.61 | 46.00 | -12.39 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



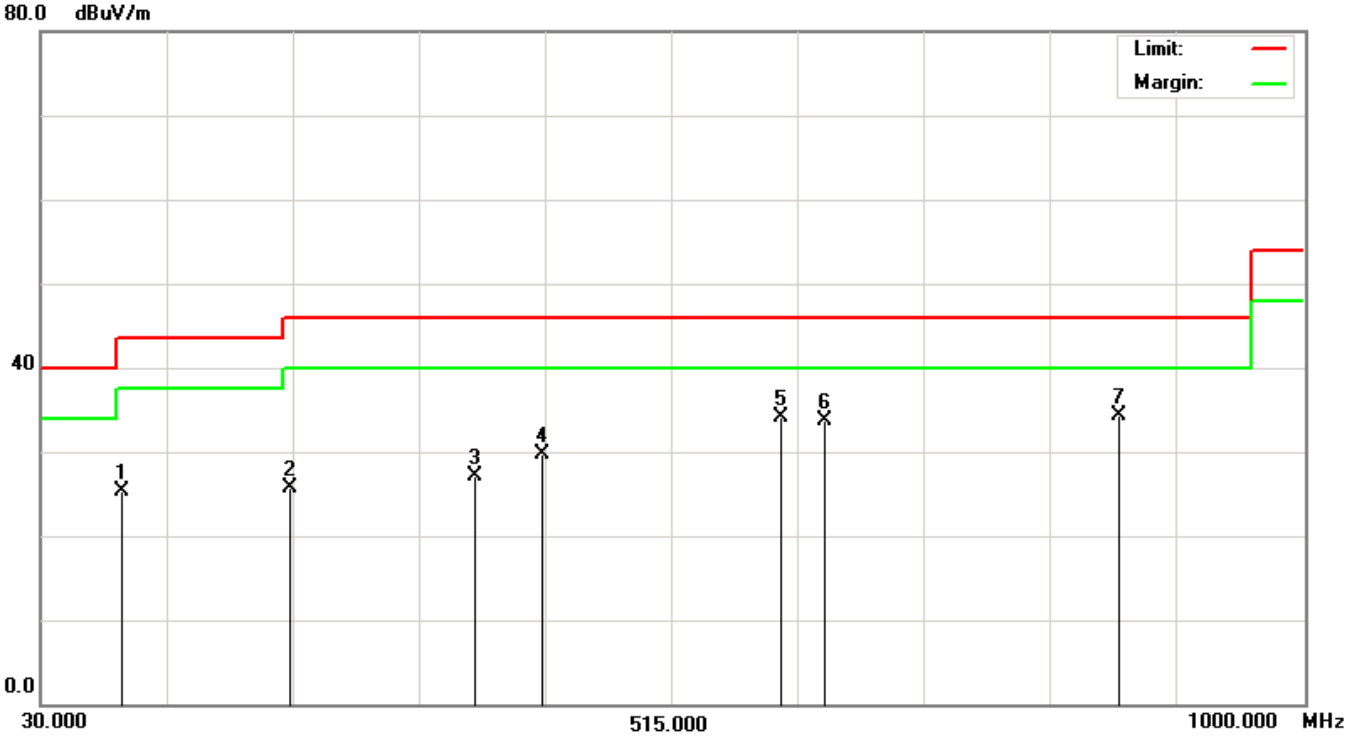

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 93.0500 | 40.00 | -14.78 | 25.22 | 43.50 | -18.28 | QP |
| 2 | 221.5750 | 33.85 | -8.24 | 25.61 | 46.00 | -20.39 | QP |
| 3 | 364.6500 | 34.81 | -7.73 | 27.08 | 46.00 | -18.92 | QP |
| 4 | 415.5750 | 35.60 | -5.93 | 29.67 | 46.00 | -16.33 | QP |
| 5 | 599.8750 | 32.81 | 1.24 | 34.05 | 46.00 | -11.95 | QP |
| 6 | 633.8250 | 32.31 | 1.31 | 33.62 | 46.00 | -12.38 | QP |
| 7 | ★859.3500 | 31.10 | 3.21 | 34.31 | 46.00 | -11.69 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



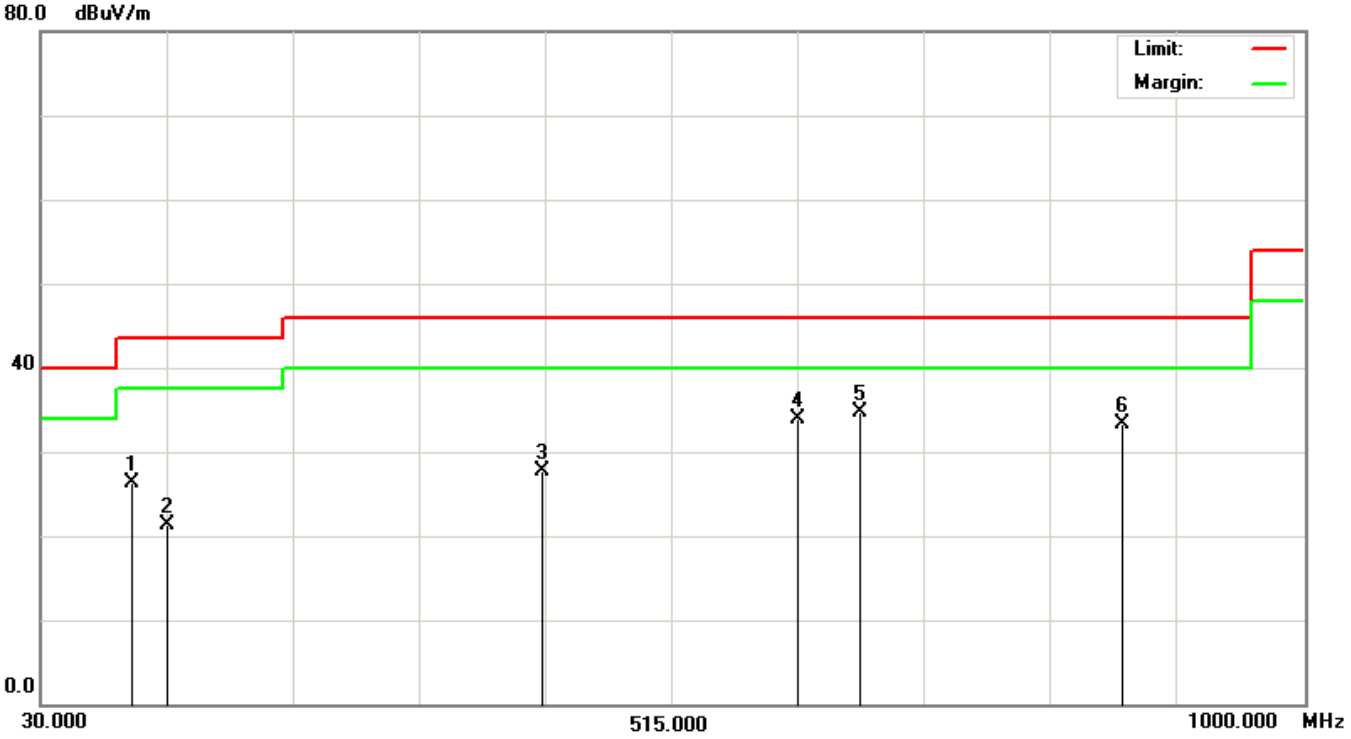

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 100.3250 | 33.00 | -6.73 | 26.27 | 43.50 | -17.23 | QP |
| 2 | 127.0000 | 37.13 | -15.74 | 21.39 | 43.50 | -22.11 | QP |
| 3 | 415.5750 | 33.29 | -5.66 | 27.63 | 46.00 | -18.37 | QP |
| 4 | 612.0000 | 32.63 | 1.24 | 33.87 | 46.00 | -12.13 | QP |
| 5 | ★660.5000 | 31.99 | 2.68 | 34.67 | 46.00 | -11.33 | QP |
| 6 | 861.7750 | 31.26 | 1.97 | 33.23 | 46.00 | -12.77 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



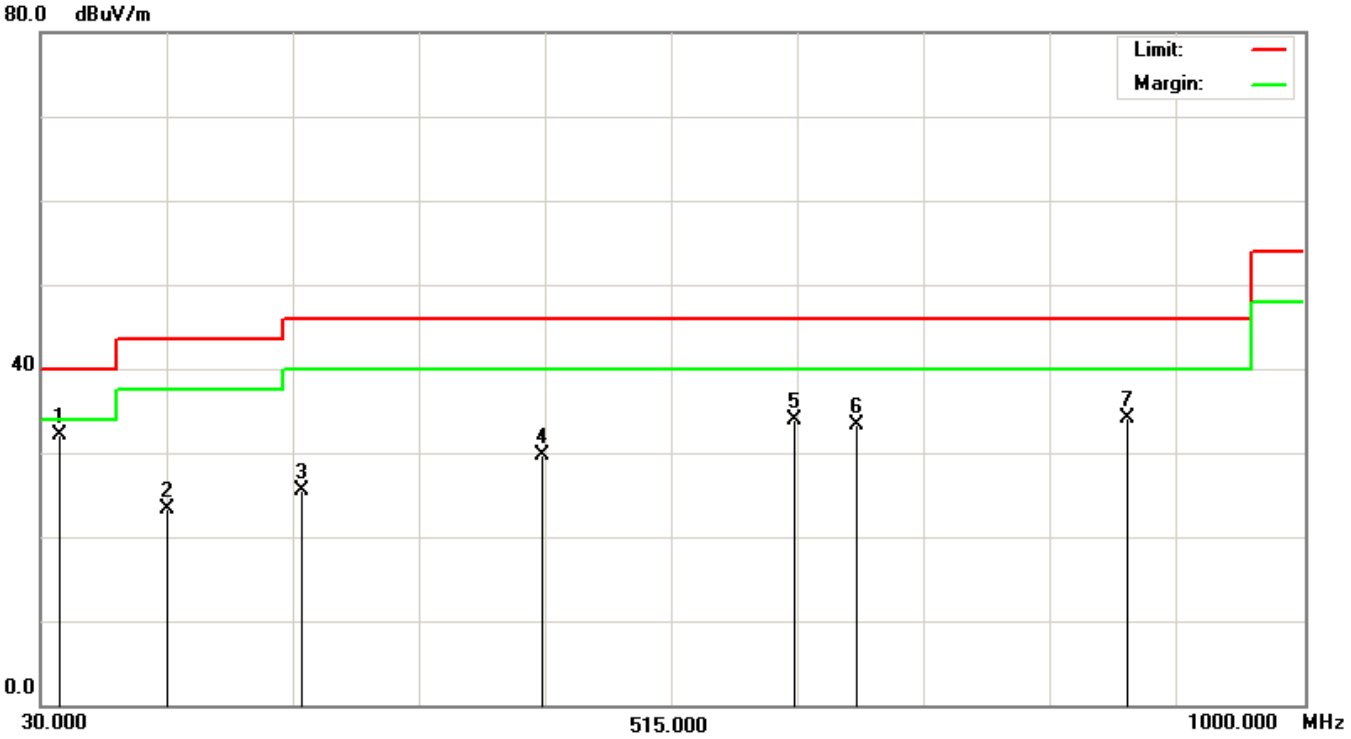

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | ★44.5500 | 36.89 | -4.78 | 32.11 | 40.00 | -7.89 | QP |
| 2 | 127.0000 | 37.88 | -14.48 | 23.40 | 43.50 | -20.10 | QP |
| 3 | 231.2750 | 33.35 | -7.77 | 25.58 | 46.00 | -20.42 | QP |
| 4 | 415.5750 | 35.68 | -5.93 | 29.75 | 46.00 | -16.25 | QP |
| 5 | 609.5750 | 32.41 | 1.54 | 33.95 | 46.00 | -12.05 | QP |
| 6 | 658.0750 | 32.19 | 1.11 | 33.30 | 46.00 | -12.70 | QP |
| 7 | 866.6250 | 31.81 | 2.37 | 34.18 | 46.00 | -11.82 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.



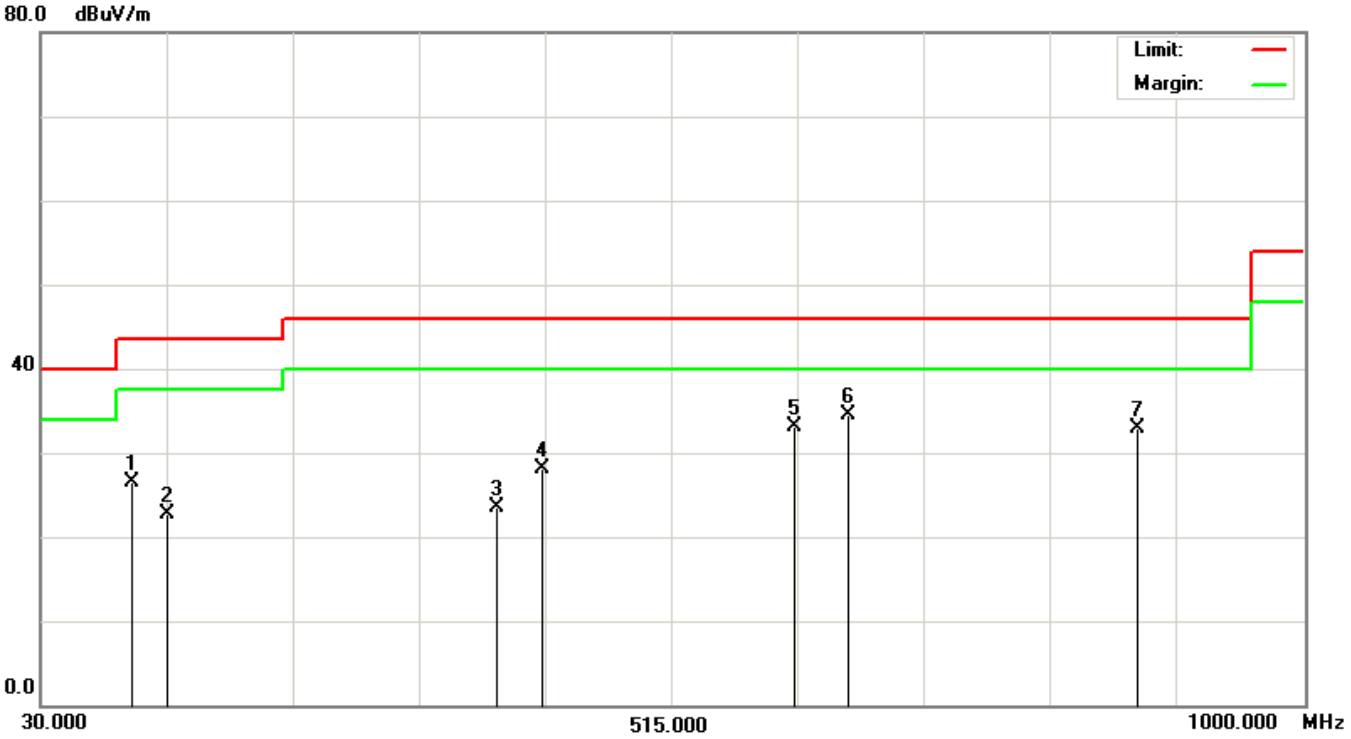

Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | January 04, 2010 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | 30-1000MHz |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 100.3250 | 33.30 | -6.73 | 26.57 | 43.50 | -16.93 | QP |
| 2 | 127.0000 | 38.35 | -15.74 | 22.61 | 43.50 | -20.89 | QP |
| 3 | 381.6250 | 32.52 | -9.05 | 23.47 | 46.00 | -22.53 | QP |
| 4 | 415.5750 | 33.69 | -5.66 | 28.03 | 46.00 | -17.97 | QP |
| 5 | 609.5750 | 31.87 | 1.15 | 33.02 | 46.00 | -12.98 | QP |
| 6 | ★650.8000 | 32.46 | 2.01 | 34.47 | 46.00 | -11.53 | QP |
| 7 | 873.9000 | 31.52 | 1.43 | 32.95 | 46.00 | -13.05 | QP |

**Remarks:**

1. All Readings below 1GHz are Quasi-Peak.
2. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
3. Over Limit (Margin Value)=Measurement level-Limit value.
4. Factor = antenna factor + cable loss – amplifier gain.
5. " ★ " means that this data is the worse case measurement level.
6. The emission level of other frequencies are very lower than the limit.




Remark: 1. The Limit (The red line of the graph indicates the quasi -peak measurements).
2. The Margin (The green line of the graph indicates the 6dB margin).

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4804.0000 | 50.50 | 1.46 | 51.96 | 74.00 | -22.04 | peak |
| 2 | 7206.0000 | 41.85 | 9.04 | >50.89 | 74.00 | -23.11 | peak |
| 3 | 9608.0000 | 43.54 | 6.55 | >50.09 | 74.00 | -23.91 | peak |
| 4 | 12010.0000 | 38.68 | 14.99 | >53.67 | 74.00 | -20.33 | peak |
| 5 | 14412.0000 | 40.93 | 9.22 | >50.15 | 74.00 | -23.85 | peak |
| 6 | 16814.0000 | 44.03 | 5.32 | >49.35 | 74.00 | -24.65 | peak |
| 7 | 19216.0000 | 42.32 | -13.89 | >28.43 | 74.00 | -45.57 | peak |
| 8 | 21618.0000 | 43.74 | -14.74 | >29.00 | 74.00 | -45.00 | peak |
| 9 | 24020.0000 | 45.68 | -14.78 | >30.90 | 74.00 | -43.10 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4804.1000 | 50.70 | 1.46 | 52.16 | 74.00 | -21.84 | peak |
| 2 | 7206.0000 | 42.32 | 8.73 | >51.05 | 74.00 | -22.95 | peak |
| 3 | 9608.0000 | 43.45 | 10.18 | >53.63 | 74.00 | -20.37 | peak |
| 4 | 12010.0000 | 36.22 | 17.45 | >53.67 | 74.00 | -20.33 | peak |
| 5 | 14412.0000 | 41.16 | 7.84 | >49.00 | 74.00 | -25.00 | peak |
| 6 | 16814.0000 | 43.09 | 5.66 | >48.75 | 74.00 | -25.25 | peak |
| 7 | 19216.0000 | 42.32 | -12.89 | >29.43 | 74.00 | -44.57 | peak |
| 8 | 21618.0000 | 42.72 | -13.74 | >28.98 | 74.00 | -45.02 | peak |
| 9 | 24020.0000 | 45.18 | -13.78 | >31.40 | 74.00 | -42.60 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4880.1000 | 48.36 | 1.42 | 49.78 | 74.00 | -24.22 | peak |
| 2 | 7320.0000 | 42.65 | 9.26 | >51.91 | 74.00 | -22.09 | peak |
| 3 | 9760.0000 | 42.47 | 6.99 | >49.46 | 74.00 | -24.54 | peak |
| 4 | 12200.0000 | 41.55 | 11.42 | >52.97 | 74.00 | -21.03 | peak |
| 5 | 14640.0000 | 41.51 | 9.04 | >50.55 | 74.00 | -23.45 | peak |
| 6 | 17080.0000 | 42.35 | 7.18 | >49.53 | 74.00 | -24.47 | peak |
| 7 | 19520.0000 | 44.10 | -14.14 | >29.96 | 74.00 | -44.04 | peak |
| 8 | 21960.0000 | 42.98 | -14.73 | >28.25 | 74.00 | -45.75 | peak |
| 9 | 24400.0000 | 46.15 | -14.98 | >31.17 | 74.00 | -42.83 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4880.4000 | 50.05 | 2.05 | 52.10 | 74.00 | -21.90 | peak |
| 2 | 7320.0000 | 42.71 | 8.56 | >51.27 | 74.00 | -22.73 | peak |
| 3 | 9760.0000 | 43.56 | 9.79 | >53.35 | 74.00 | -20.65 | peak |
| 4 | 12200.0000 | 39.35 | 13.87 | >53.22 | 74.00 | -20.78 | peak |
| 5 | 14640.0000 | 41.89 | 7.29 | >49.18 | 74.00 | -24.82 | peak |
| 6 | 17080.0000 | 42.82 | 7.25 | >50.07 | 74.00 | -23.93 | peak |
| 7 | 19520.0000 | 43.35 | -13.14 | >30.21 | 74.00 | -43.79 | peak |
| 8 | 21960.0000 | 42.32 | -13.73 | >28.59 | 74.00 | -45.41 | peak |
| 9 | 24400.0000 | 45.69 | -13.98 | >31.71 | 74.00 | -42.29 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4960.4000 | 49.55 | 1.34 | 50.89 | 74.00 | -23.11 | peak |
| 2 | 7440.0000 | 41.95 | 8.78 | >50.73 | 74.00 | -23.27 | peak |
| 3 | 9920.0000 | 43.48 | 4.61 | >48.09 | 74.00 | -25.91 | peak |
| 4 | 12400.0000 | 42.04 | 7.24 | >49.28 | 74.00 | -24.72 | peak |
| 5 | 14880.0000 | 42.37 | 8.14 | >50.51 | 74.00 | -23.49 | peak |
| 6 | 17360.0000 | 42.32 | 7.92 | >50.24 | 74.00 | -23.76 | peak |
| 7 | 19840.0000 | 43.66 | -14.17 | >29.49 | 74.00 | -44.51 | peak |
| 8 | 22320.0000 | 44.35 | -14.85 | >29.50 | 74.00 | -44.50 | peak |
| 9 | 24800.0000 | 44.93 | -14.50 | >30.43 | 74.00 | -43.57 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4960.5000 | 49.79 | 2.65 | 52.14 | 74.00 | -21.86 | peak |
| 2 | 7440.0000 | 42.36 | 8.36 | >50.72 | 74.00 | -23.28 | peak |
| 3 | 9920.0000 | 43.86 | 9.77 | >53.63 | 74.00 | -20.37 | peak |
| 4 | 12400.0000 | 42.00 | 9.97 | >51.97 | 74.00 | -22.03 | peak |
| 5 | 14880.0000 | 41.61 | 6.60 | >48.21 | 74.00 | -25.79 | peak |
| 6 | 17360.0000 | 42.21 | 11.02 | >53.23 | 74.00 | -20.77 | peak |
| 7 | 19840.0000 | 43.76 | -13.17 | >30.59 | 74.00 | -43.41 | peak |
| 8 | 22320.0000 | 43.45 | -13.85 | >29.60 | 74.00 | -44.40 | peak |
| 9 | 24800.0000 | 45.38 | -13.50 | >31.88 | 74.00 | -42.12 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4804.4000 | 50.66 | 1.46 | 52.12 | 74.00 | -21.88 | peak |
| 2 | 7206.0000 | 44.11 | 9.04 | >53.15 | 74.00 | -20.85 | peak |
| 3 | 9608.0000 | 44.43 | 6.55 | >50.98 | 74.00 | -23.02 | peak |
| 4 | 12010.0000 | 38.86 | 14.99 | >53.85 | 74.00 | -20.15 | peak |
| 5 | 14412.0000 | 41.24 | 9.22 | >50.46 | 74.00 | -23.54 | peak |
| 6 | 16814.0000 | 43.14 | 5.32 | >48.46 | 74.00 | -25.54 | peak |
| 7 | 19216.0000 | 43.07 | -13.89 | >29.18 | 74.00 | -44.82 | peak |
| 8 | 21618.0000 | 43.82 | -14.74 | >29.08 | 74.00 | -44.92 | peak |
| 9 | 24020.0000 | 45.61 | -14.78 | >30.83 | 74.00 | -43.17 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 00 (2402MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4804.4000 | 47.49 | 1.46 | 48.95 | 74.00 | -25.05 | peak |
| 2 | 7206.0000 | 42.65 | 8.73 | >51.38 | 74.00 | -22.62 | peak |
| 3 | 9608.0000 | 43.25 | 10.18 | >53.43 | 74.00 | -20.57 | peak |
| 4 | 12010.0000 | 36.19 | 17.45 | >53.64 | 74.00 | -20.36 | peak |
| 5 | 14412.0000 | 40.52 | 7.84 | >48.36 | 74.00 | -25.64 | peak |
| 6 | 16814.0000 | 43.36 | 5.66 | >49.02 | 74.00 | -24.98 | peak |
| 7 | 19216.0000 | 42.84 | -12.89 | >29.95 | 74.00 | -44.05 | peak |
| 8 | 21618.0000 | 43.78 | -13.74 | >30.04 | 74.00 | -43.96 | peak |
| 9 | 24020.0000 | 45.40 | -13.78 | >31.62 | 74.00 | -42.38 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4880.1000 | 49.40 | 1.42 | 50.82 | 74.00 | -23.18 | peak |
| 2 | 7320.0000 | 43.74 | 9.26 | >53.00 | 74.00 | -21.00 | peak |
| 3 | 9760.0000 | 43.94 | 6.99 | >50.93 | 74.00 | -23.07 | peak |
| 4 | 12200.0000 | 41.61 | 11.42 | >53.03 | 74.00 | -20.97 | peak |
| 5 | 14640.0000 | 42.30 | 9.04 | >51.34 | 74.00 | -22.66 | peak |
| 6 | 17080.0000 | 42.62 | 7.18 | >49.80 | 74.00 | -24.20 | peak |
| 7 | 19520.0000 | 44.72 | -14.14 | >30.58 | 74.00 | -43.42 | peak |
| 8 | 21960.0000 | 43.20 | -14.73 | >28.47 | 74.00 | -45.53 | peak |
| 9 | 24400.0000 | 46.35 | -14.98 | >31.37 | 74.00 | -42.63 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 38 (2440MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4880.6000 | 50.03 | 2.05 | 52.08 | 74.00 | -21.92 | peak |
| 2 | 7320.0000 | 44.43 | 8.56 | >52.99 | 74.00 | -21.01 | peak |
| 3 | 9760.0000 | 42.66 | 9.79 | >52.45 | 74.00 | -21.55 | peak |
| 4 | 12200.0000 | 39.70 | 13.87 | >53.57 | 74.00 | -20.43 | peak |
| 5 | 14640.0000 | 41.69 | 7.29 | >48.98 | 74.00 | -25.02 | peak |
| 6 | 17080.0000 | 43.06 | 7.25 | >50.31 | 74.00 | -23.69 | peak |
| 7 | 19520.0000 | 44.08 | -13.14 | >30.94 | 74.00 | -43.06 | peak |
| 8 | 21960.0000 | 42.14 | -13.73 | >28.41 | 74.00 | -45.59 | peak |
| 9 | 24400.0000 | 46.09 | -13.98 | >32.11 | 74.00 | -41.89 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Horizontal** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4960.5000 | 50.75 | 1.34 | 52.09 | 74.00 | -21.91 | peak |
| 2 | 7440.0000 | 42.42 | 8.78 | >51.20 | 74.00 | -22.80 | peak |
| 3 | 9920.0000 | 43.74 | 4.61 | >48.35 | 74.00 | -25.65 | peak |
| 4 | 12400.0000 | 41.65 | 7.24 | >48.89 | 74.00 | -25.11 | peak |
| 5 | 14880.0000 | 41.63 | 8.14 | >49.77 | 74.00 | -24.23 | peak |
| 6 | 17360.0000 | 41.42 | 7.92 | >49.34 | 74.00 | -24.66 | peak |
| 7 | 19840.0000 | 43.70 | -14.17 | >29.53 | 74.00 | -44.47 | peak |
| 8 | 22320.0000 | 43.74 | -14.85 | >28.89 | 74.00 | -45.11 | peak |
| 9 | 24800.0000 | 45.16 | -14.50 | >30.66 | 74.00 | -43.34 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2-CH 78 (2480MHz) | | |
| **Antenna distance** | 3m at **Vertical** | **Frequency Range** | Above 1GHz |

| No. | Frequency MHz | Reading Level dBµV | Factor dB | Measurement dBµV/m | Limit dBµV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 4960.3000 | 48.60 | 2.65 | 51.25 | 74.00 | -22.75 | peak |
| 2 | 7440.0000 | 42.72 | 8.36 | >51.08 | 74.00 | -22.92 | peak |
| 3 | 9920.0000 | 43.93 | 9.77 | >53.70 | 74.00 | -20.30 | peak |
| 4 | 12400.0000 | 41.97 | 9.97 | >51.94 | 74.00 | -22.06 | peak |
| 5 | 14880.0000 | 41.97 | 6.60 | >48.57 | 74.00 | -25.43 | peak |
| 6 | 17360.0000 | 42.81 | 11.02 | >53.83 | 74.00 | -20.17 | peak |
| 7 | 19840.0000 | 43.97 | -13.17 | >30.80 | 74.00 | -43.20 | peak |
| 8 | 22320.0000 | 43.59 | -13.85 | >29.74 | 74.00 | -44.26 | peak |
| 9 | 24800.0000 | 45.08 | -13.50 | >31.58 | 74.00 | -42.42 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=20MHz.
3. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=10HZ, Span=20MHz.
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The emission level of other frequencies are very lower than the limit.
9. This “>” symbol indicate that the noise figure is greater than the EUT signal

## 3.7.2 FUNDAMEDTAL RADIATED EMISSIONS

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1 | | |
| **Antenna distance** | 3m at **Horizontal** | | |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 2402.0000 | 62.19 | -4.11 | 58.08 | 114.00 | -55.92 | peak |
| 2 | 2440.3000 | 64.23 | -4.41 | 59.82 | 114.00 | -54.18 | peak |
| 3 | 2480.3000 | 65.63 | -4.73 | 60.90 | 114.00 | -53.10 | peak |

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 1 | | |
| **Antenna distance** | 3m at **Vertical** | | |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 2402.3000 | 64.70 | -5.89 | 58.81 | 114.00 | -55.19 | peak |
| 2 | 2440.3000 | 66.92 | -6.47 | 60.45 | 114.00 | -53.55 | peak |
| 3 | 2480.3000 | 68.53 | -7.09 | 61.44 | 114.00 | -52.56 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. AVG Measurement =Peak Measurement + Duty Cycle(Log Scale).
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The Duty Cycle is refer to section 5.
9. If Duty Cycle is smaller than -20dB, based on FCC part15 the duty cycle correction factor is -20dB for calculating average emission.

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2 | | |
| **Antenna distance** | 3m at **Horizontal** | | |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 2402.0000 | 63.45 | -4.11 | 59.34 | 114.00 | -54.66 | peak |
| 2 | 2440.0000 | 65.70 | -4.41 | 61.29 | 114.00 | -52.71 | peak |
| 3 | 2480.5000 | 66.92 | -4.73 | 62.19 | 114.00 | -51.81 | peak |

| | | | |
|---|---|---|---|
| **Date of Test** | December 29, 2009 | **Temperature** | 19.2 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 61 %RH |
| **Working Cond.** | Mode 2 | | |
| **Antenna distance** | 3m at **Vertical** | | |

| No. | Frequency MHz | Reading Level dBuV | Factor dB | Measurement dBuV/m | Limit dBuV/m | Over Limit dB | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 2402.0000 | 62.88 | -5.88 | 57.00 | 114.00 | -57.00 | peak |
| 2 | 2440.3000 | 66.19 | -6.47 | 59.72 | 114.00 | -54.28 | peak |
| 3 | 2480.5000 | 68.51 | -7.09 | 61.42 | 114.00 | -52.58 | peak |

**Remark**

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=1MHz, VBW=1MHZ, Span=100MHz.
3. AVG Measurement =Peak Measurement + Duty Cycle(Log Scale).
4. Measurement = Reading + Factor (Could have ±0.01 tolerance due to computer automatically round off calculation).
5. Factor = antenna factor + cable loss – amplifier gain.
6. Over Limit (Margin Value)=Measurement level-Limit value.
7. The average measurement was not performed when the peak measured data under the limit of average detection. If the average value is measured, peak measurement should also be supplied.
8. The Duty Cycle is refer to section 5.
9. If Duty Cycle is smaller than -20dB, based on FCC part15 the duty cycle correction factor is -20dB for calculating average emission.

# 4. BAND EDGE

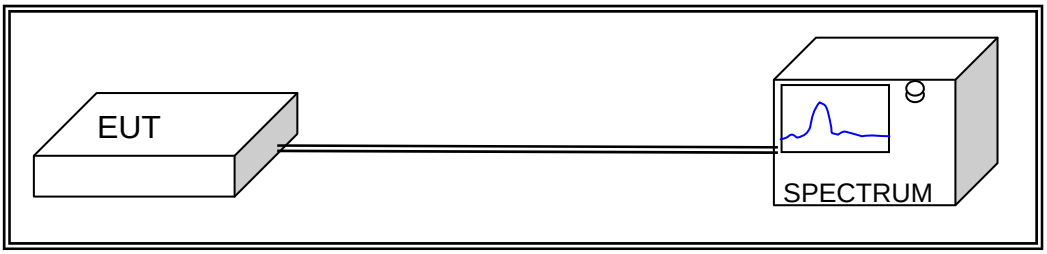
## 4.1 TEST EQUIPMENT

| Item | Instrument | Manufacturer | Model | Serial No. | Next Cal. Date |
|---|---|---|---|---|---|
| 1 | SPECTRUM | HP | E4407B | US39240339 | 2010.08.24 |
| 2 | Standard Temperature/ Humid. Chamber | WIT Scientific | TH-4S-B | W960909 | 2010.08.24 |

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

## 4.2 BLOCK DIAGRAM OF TEST SETUP

**◎ RF Conduced Measurement: ◎**



## 4.3 BAND EDGE LIMIT

In any 100KHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209 (a) (see Section 15.205(c)).

## 4.4 EUT CONFIGURATION

The EUT connected to a spectrum analyzer. Select the spectrum analyzer's frequency sweep range to include the detection of the fundamental to be launched with the band edge emission peaks between the two. Set the spectrum analyzer's resolution bandwidth of 1% of the total frequency sweep range, but not less than 30kHz, video bandwidth of not less than RBW.

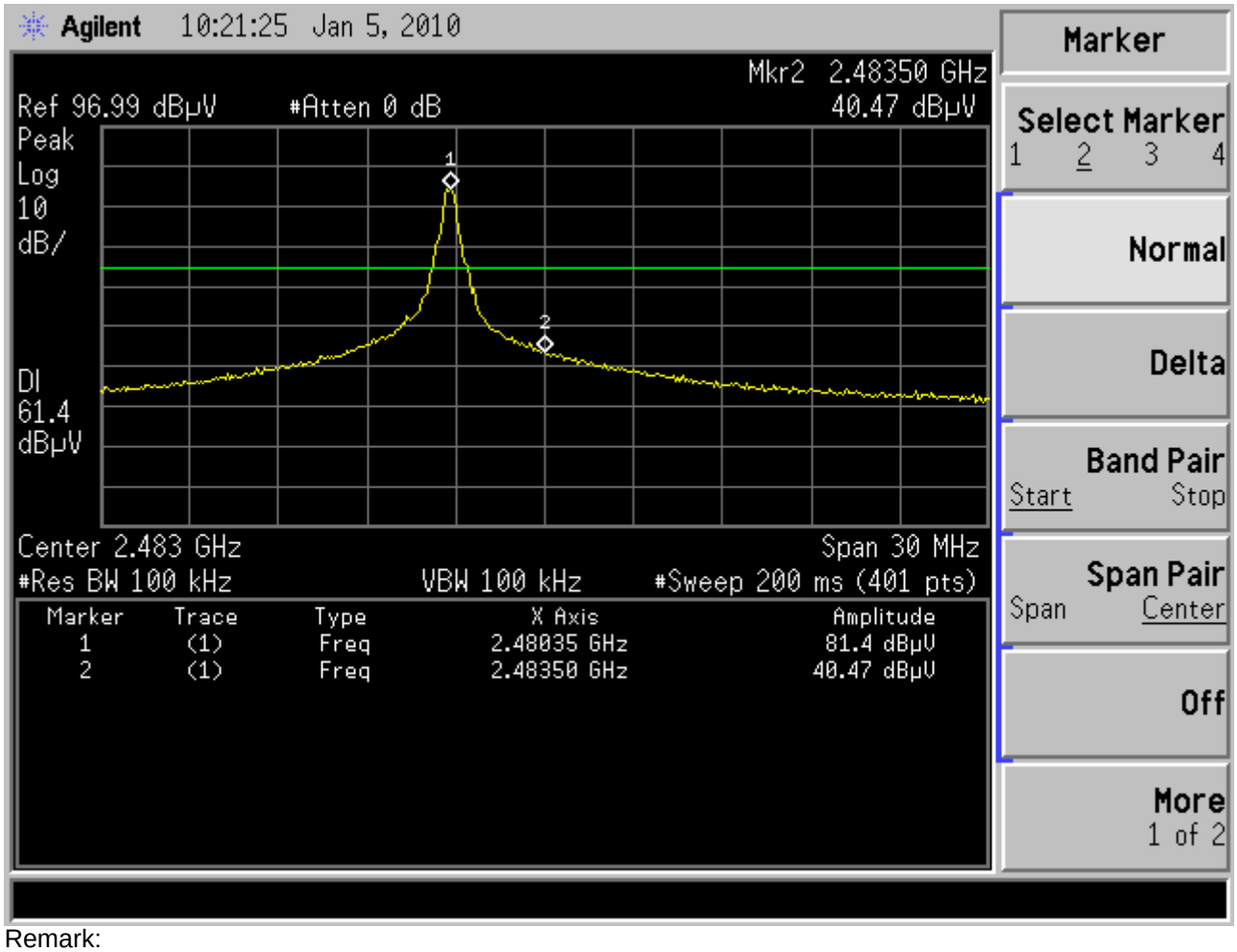
## 4.5 OPERATING CONDITION OF EUT

Same as section 2.7.

### 4.6 TEST RELULT

| | | | |
|---|---|---|---|
| **Date of Test** | January 05, 2010 | **Temperature** | 18.4 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 65 %RH |
| **Working Cond.** | Mode 1 | **Test Band** | Higher |

## Conducted Emissions

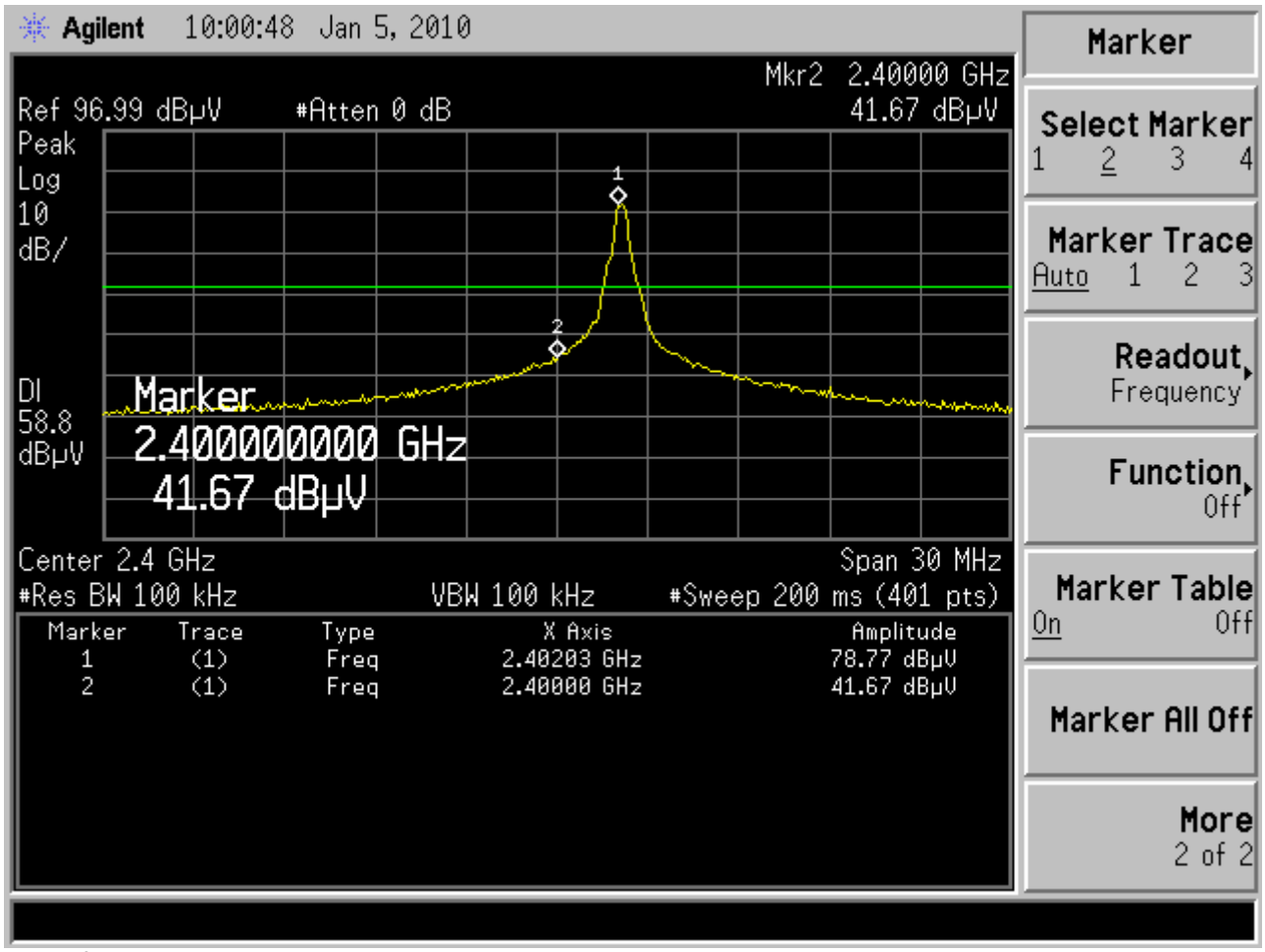



Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=100kHz, VBW=100kHZ.

| | | | |
|---|---|---|---|
| **Date of Test** | January 05, 2010 | **Temperature** | 18.4 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 65 %RH |
| **Working Cond.** | Mode 1 | **Test Band** | Lower |

# Conducted Emissions

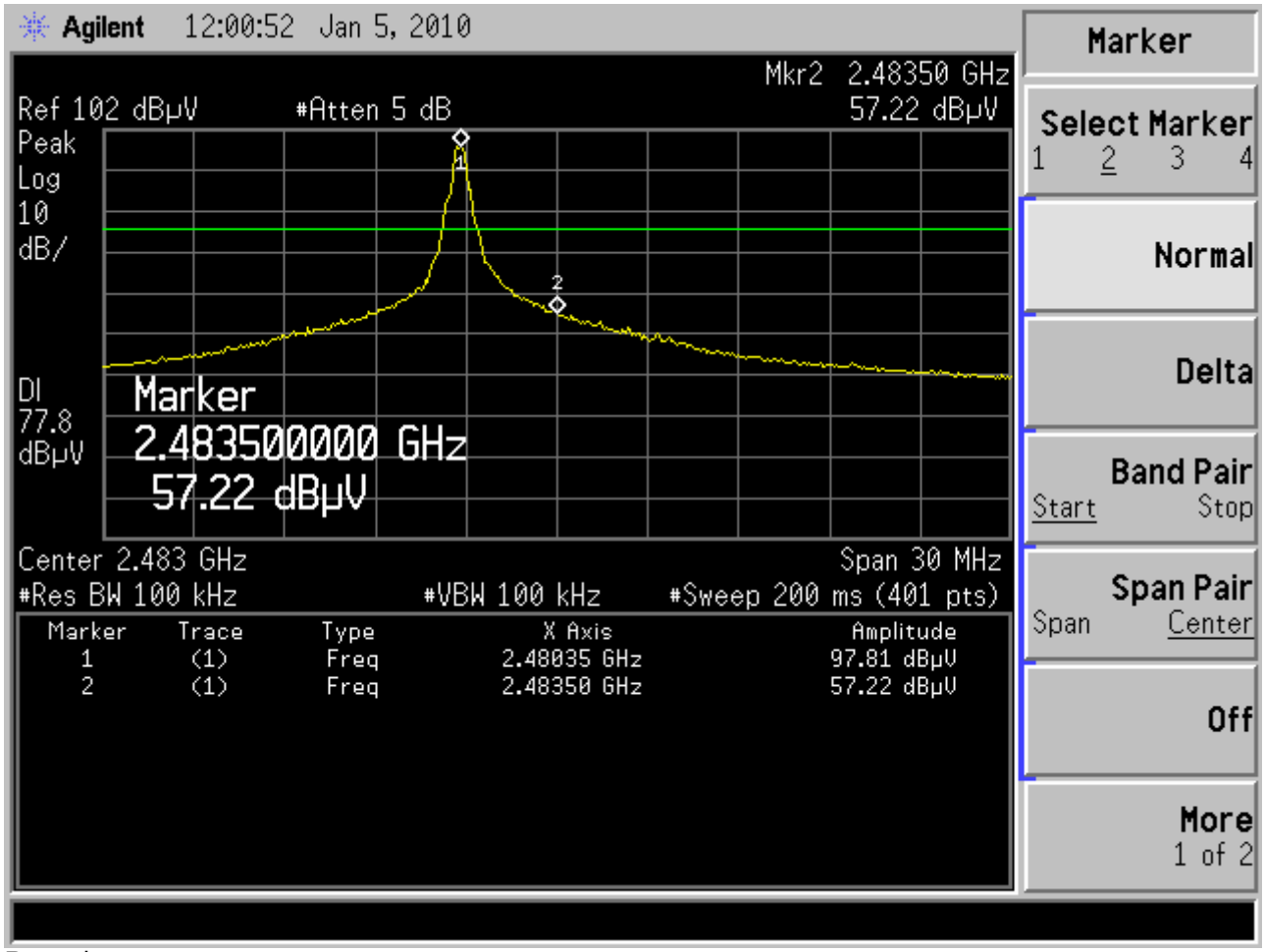



Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=100kHz, VBW=100kHZ.

| | | | |
|---|---|---|---|
| **Date of Test** | January 05, 2010 | **Temperature** | 18.4 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 65 %RH |
| **Working Cond.** | Mode 2 | **Test Band** | Higher |

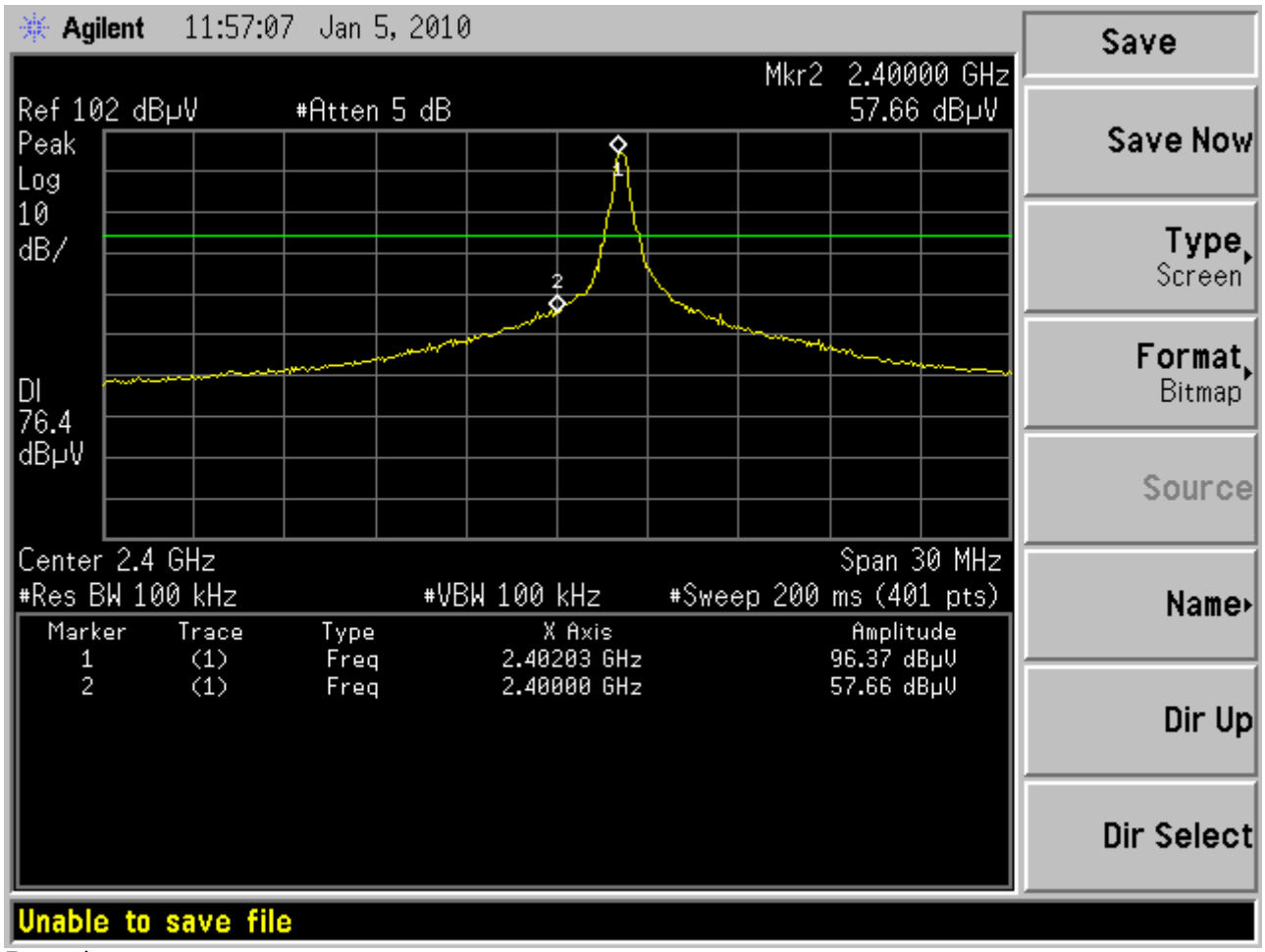
# Conducted Emissions




Remark:
1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=100kHz, VBW=100kHZ.

| | | | |
|---|---|---|---|
| **Date of Test** | January 05, 2010 | **Temperature** | 18.4 deg/C |
| **EUT** | 2.4GHz ISM RF Module | **Humidity** | 65 %RH |
| **Working Cond.** | Mode 2 | **Test Band** | Lower |

# Conducted Emissions




Remark:

1. All Readings below 1GHz are Quasi-Peak and above 1GHz are peak or average.
2. Spectrum Analizyer Setting(Peak Detector): RBW=100kHz, VBW=100kHZ.

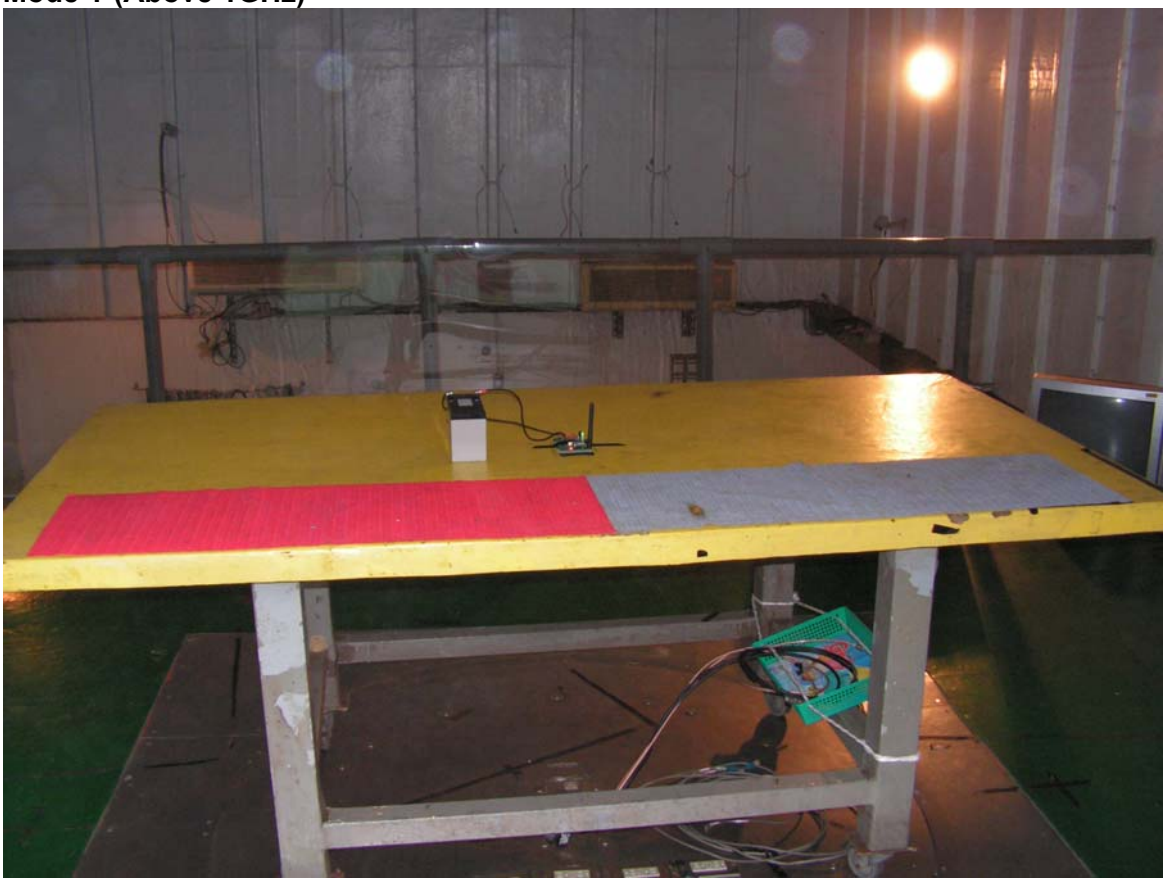
# 5. PHOTOGRAPHS FOR TEST

## 5.1 TEST PHOTOGRAPHS FOR RADIATION

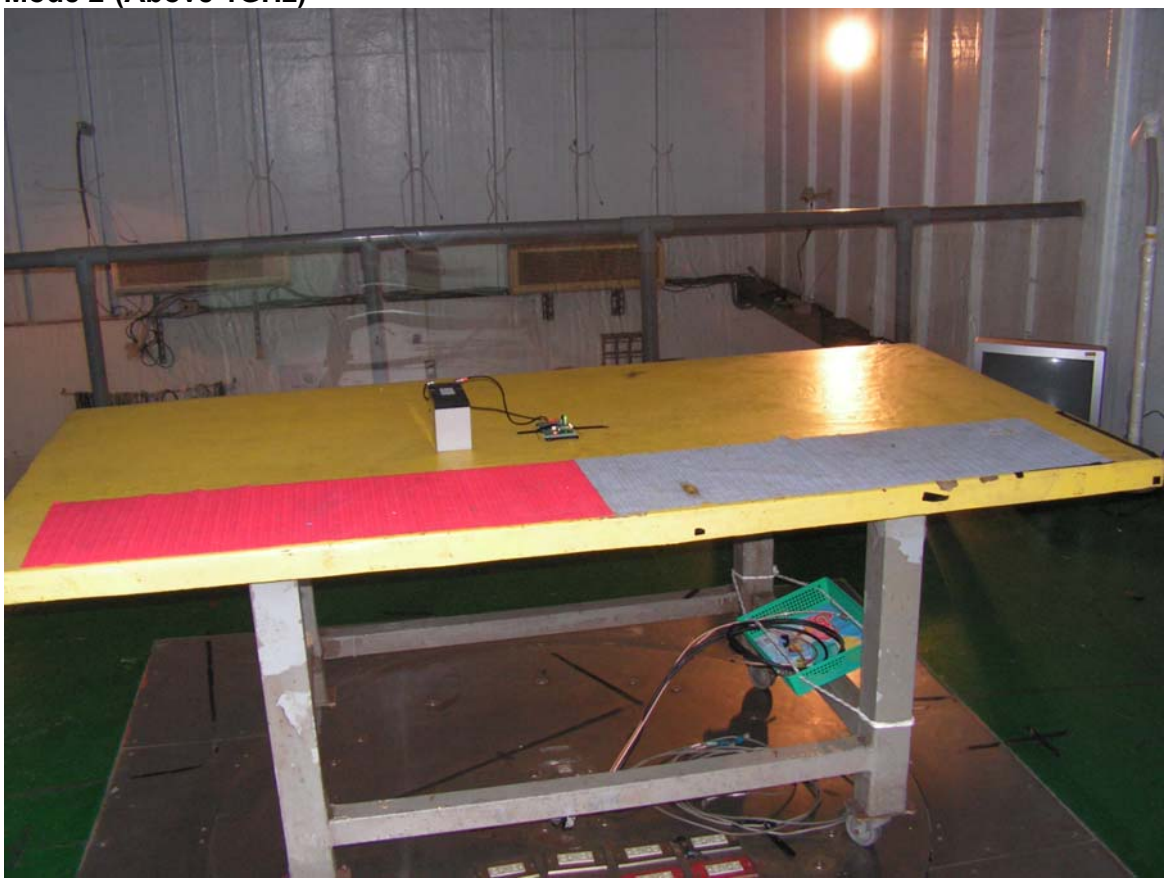
**Mode 1-(30-1000MHz)**

**Mode 2-(30-1000MHz)**

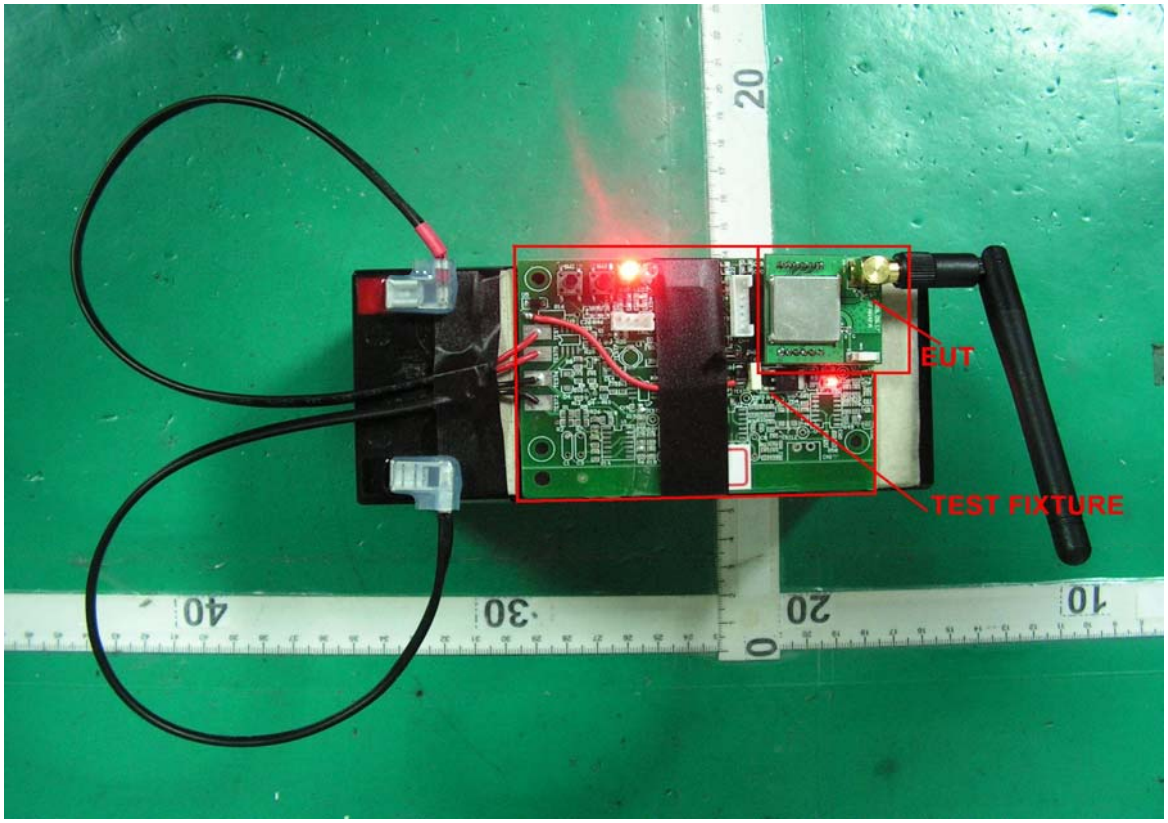
**Mode 1-(Above 1GHz)**

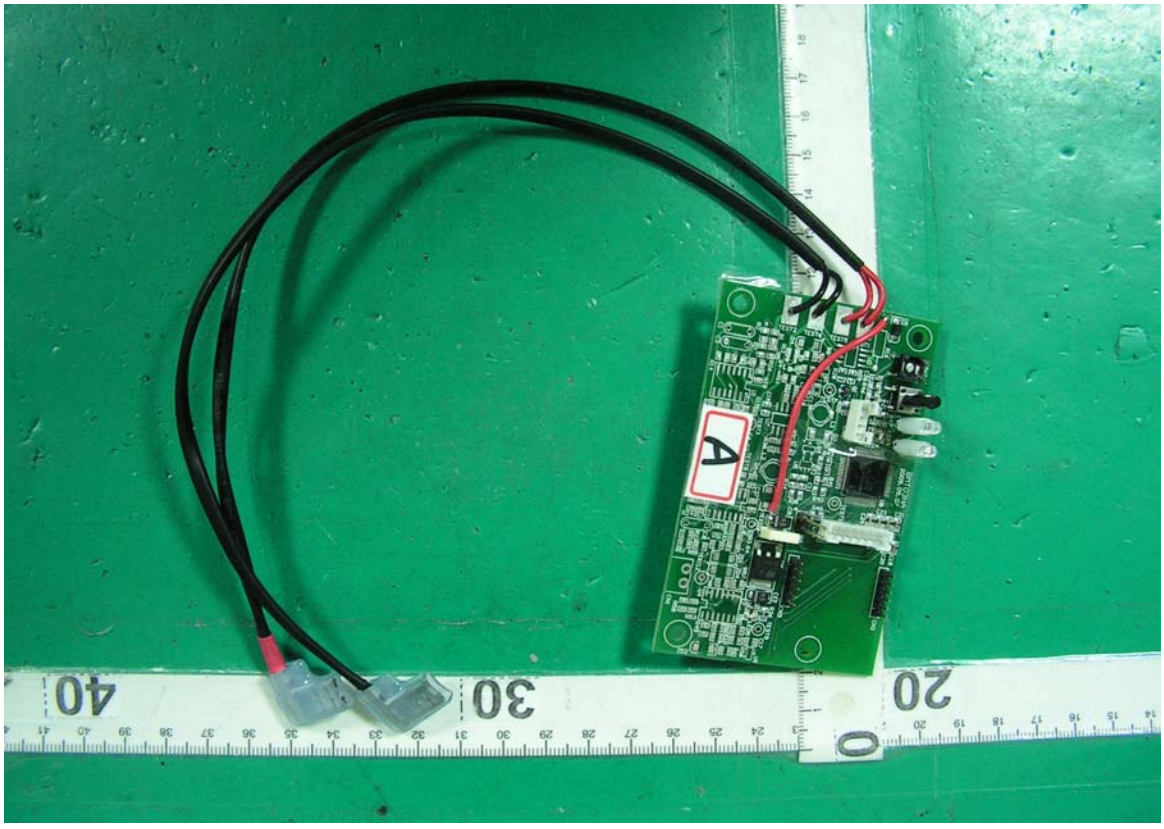


**Mode 2-(Above 1GHz)**

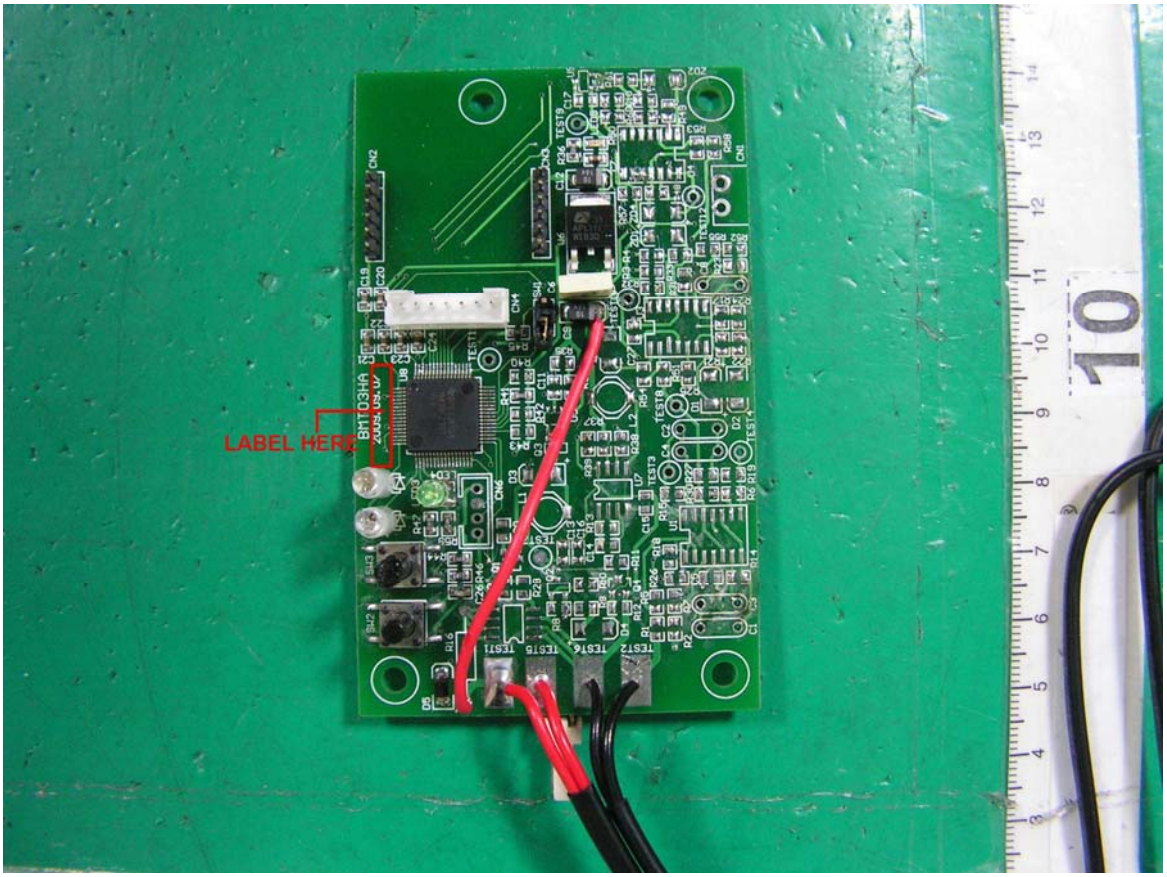


1. 2.4GHz ISM RF Module + 測試治具 + Battery
2. 測試治具



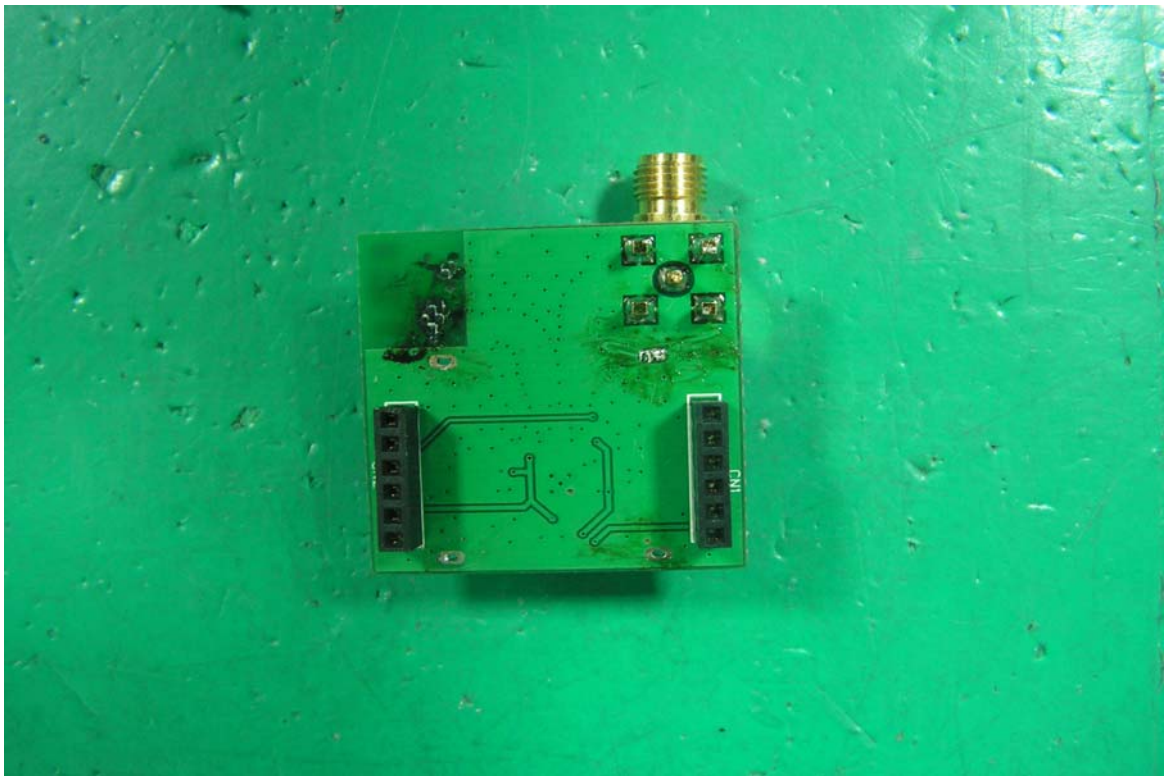
3. LABEL HERE IN MAIN BOARD



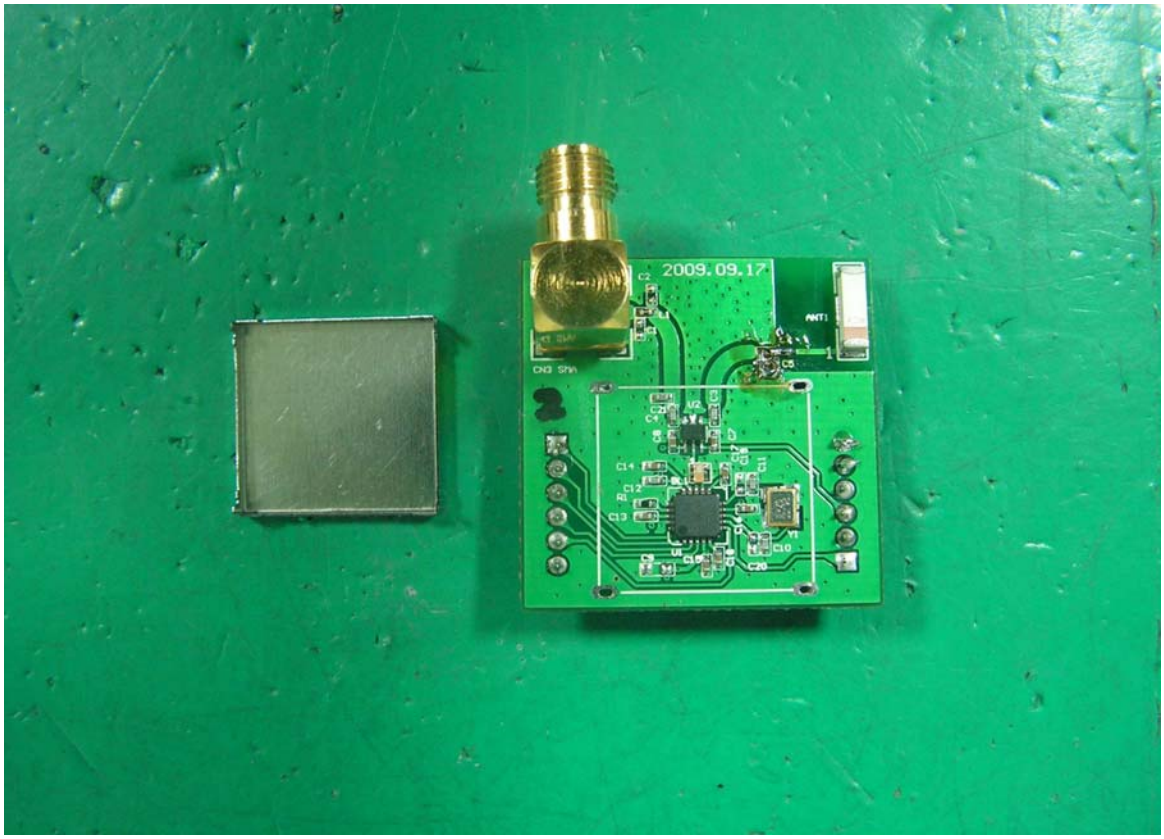
# 6. PHOTOGRAPHS FOR PRODUCT

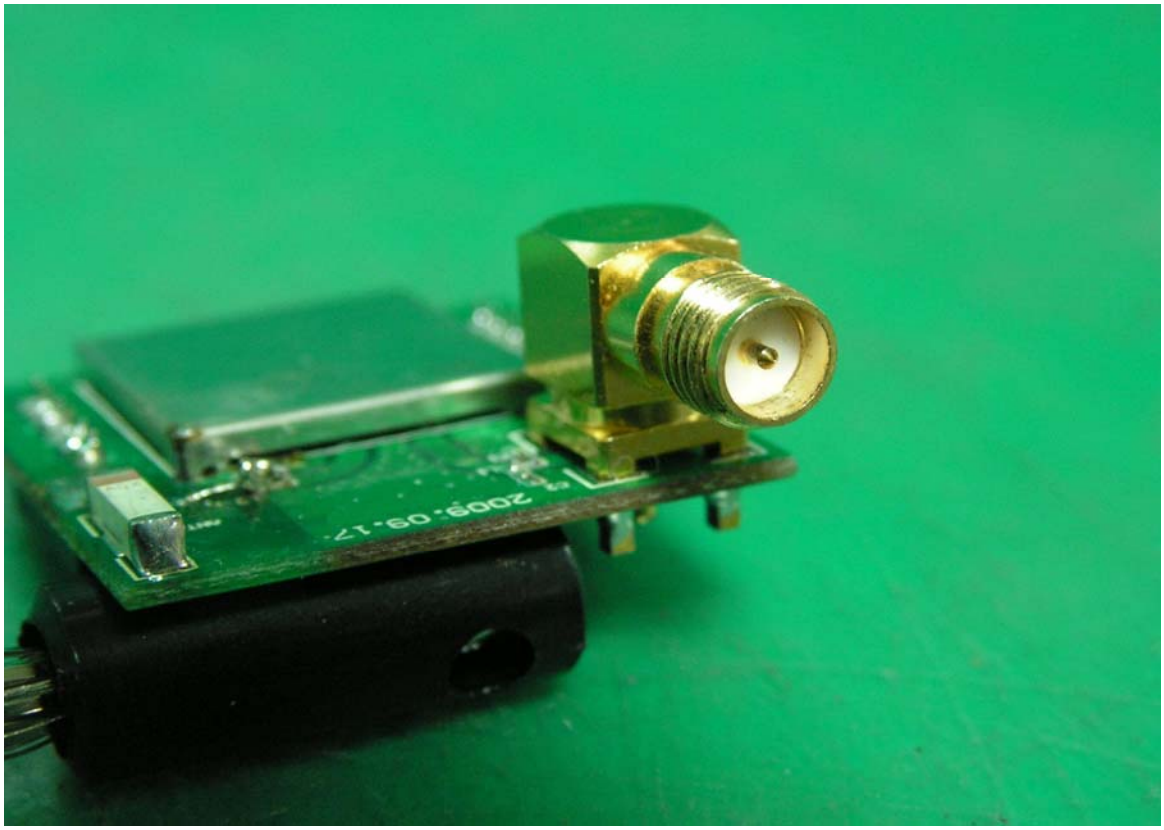
1. 2.4GHz ISM RF Module+ AND CONDUCTED MEASUREMENT POINT (EUT)

2. RF MODULE+ AND CONDUCTED MEASUREMENT POINT
3. RF MODULE-

4. SHIELDED COVER REMOVE
5. ANT CONNECTOR



6. DIPOLE ANT CONNECTOR
7. DIPOLE ANT

8. LABEL HERE IN RF MODULE

# 7. EMI REDUCTION METHOD DURING COMPLIANCE TESTING

No modification was made during testing.

# Appendix A

# Circuit (Block) Diagram

(Shall be added by Applicant)

# Appendix B

# User Manual

(Shall be added by Applicant)